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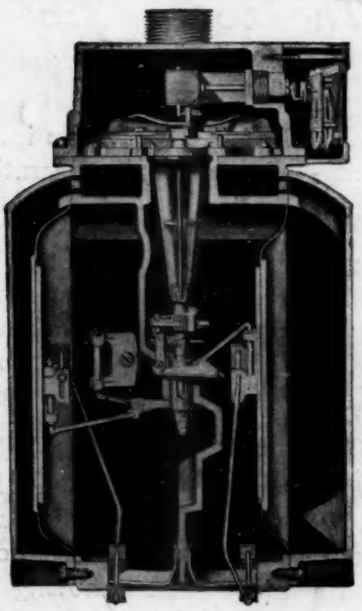

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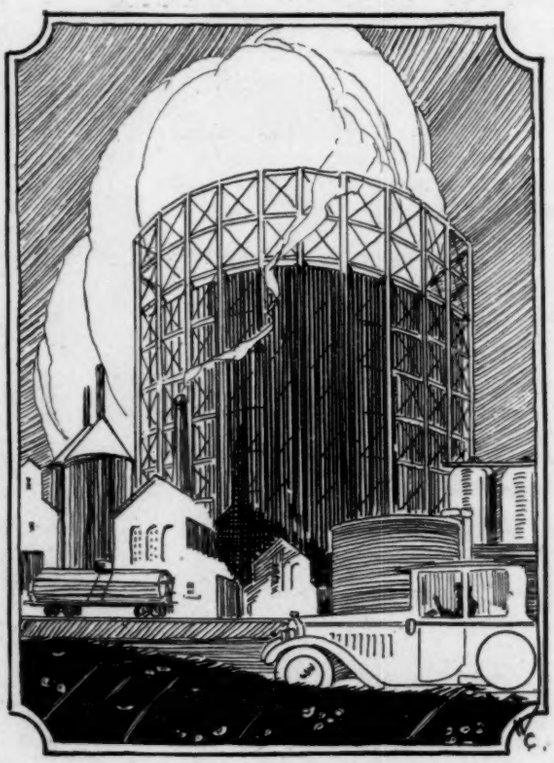

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American Gas Journal

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Increasing Ammonia Output in Coal Distillation

The Recovery of the Hydrocyanic Acid in Coke Oven Gas by Conversion into Ammonium Sulphate

Adapted and Translated from the German Article by F. Sommer, in "Stahl u. Eisen," Volume 41, page 852, 1921

The gas produced from the distillation of coal in coke oven plants contains so little hydrocyanic acid, that its recovery as such involves too great an expense to be compensated for adequately by the price received for the product obtained. Hence it was customary for a long time to allow the hydrocyanic acid to go to waste by burning the same in the furnace. As far back as 1904, it was observed by Carpenter and Linder (Journal of the Society of Chemical Industry, 23, 584) that hydrocyanic acid can be converted into ammonia by the action of steam in the presence of iron ore, or in other words iron oxide. Further investigations corroborated this fact, and quite detailed information was obtained from various researches on the subject.

The processes that were developed to convert the prussic acid gas into ammonia and that were applied in practice, based upon the above principle, could not, however, be operated with the apparatus that is found in the average coke plant, but required the installation of new apparatus. The investigation, which is the subject of this article, was made with the purpose of effecting this conversion, at least in part if not in its entirety, with the aid of as much as possible of the existing equipment in the coke plant. The chief aim of the investigator was to develop a process which could be applied as cheaply as possible and with the least possible change or addition to the operating personnel or equipment of the coke plant.

The Chemistry of the Process

The reaction written to express the conversion of hydrocyanic acid into ammonia is as follows: HCN plus HOH equals NH_3 plus CO, that is, hydrocyanic acid plus steam will give ammonia and carbon monoxide. This is in reality a saponification of the nitrile of formic acid, which is accomplished by superheated steam in the presence of an iron oxide catalyst. However, it has been found that the same action can be effected by means of sulphuric acid, which process is more suited to the existing conditions in a coke plant. In this case the action takes place in two steps, involving the intermediate formation of the amide of formic acid; that is, formamide. The reactions are as follows:

1. $HCN + HOH = HC{:}O{:}NH_2$ (formamide).
2. $HC{:}O{:}NH_2 + HOH = NH_3 + HCOOH$ (formic acid).

However, the formic acid produced cannot exist as such in the presence of the strong sulphuric acid, and is therefore decomposed into water and carbon monoxide, as follows:

3. $HCOOH = HOH + CO$.

When these three reactions are combined, there is obtained the following equation, which represents the conversion of hydrocyanic acid into ammonia by means of sulphuric acid, and which is identical with the equation written for the iron oxide process:

4. $HCN + HOH = NH_3 + CO$.

On the other hand, in the presence of substances which can be reduced, the formic acid is decomposed into hydrogen and carbon dioxide, and it is altogether likely that this decomposition takes place in the process in question. The ammonia produced is absorbed in the excess sulphuric acid with the formation of ammonium sulphate.

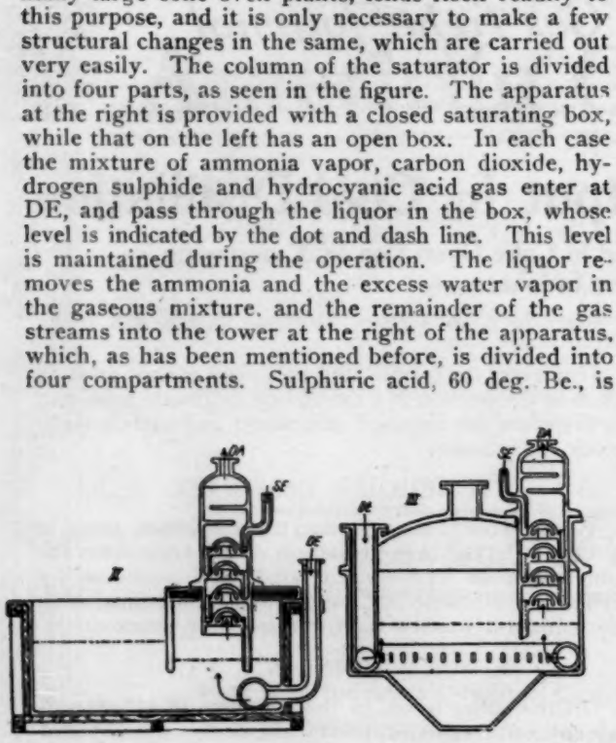
Experimental Investigation

In the laboratory, hydrocyanic acid was prepared by adding sulphuric acid to a solution of calcium cyanamide, and the acid was introduced into three flasks, filled with sulphuric acid of different concentrations, so as to determine which strength of acid was best suited to effect the conversion of the prussic acid into ammonia. The best results were obtained with 60 deg. Be sulphuric acid, which converted 98.3 per cent of the hydrocyanic acid into ammonia, when an excess of water vapor was present and when the acid was heated slightly.

In order to obtain the same conditions in the experiments as actually exist in practice, the hydrocyanic acid gas was saturated with carbon dioxide in addition to water vapor, and then led into the reaction bottles, so that the mixture corresponded to the hydrocyanic acid gas vapor, which escapes from the saturator in the coke plant. In this case a conversion of 95 per cent was obtained. Further experiments were instituted to determine the influence of the water vapor content of the gaseous mixture, as well as that of other gases, such as hydrogen and to establish the most favorable temperature at which the acid must be kept to obtain the highest conversion efficiency. When the acid was maintained at a temperature of from 70 to 100 deg. Cent., good yields of ammonia were obtained.

Practical Application

The standard Collin saturator, which is used in many large coke oven plants, lends itself readily to this purpose, and it is only necessary to make a few structural changes in the same, which are carried out very easily. The column of the saturator is divided into four parts, as seen in the figure. The apparatus at the right is provided with a closed saturating box, while that on the left has an open box. In each case the mixture of ammonia vapor, carbon dioxide, hydrogen sulphide and hydrocyanic acid gas enter at DE, and pass through the liquor in the box, whose level is indicated by the dot and dash line. This level is maintained during the operation. The liquor removes the ammonia and the excess water vapor in the gaseous mixture, and the remainder of the gas streams into the tower at the right of the apparatus, which, as has been mentioned before, is divided into four compartments. Sulphuric acid, 60 deg. Be., is



introduced at SE and irrigates the tower, coming into contact with the hydrocyanic acid gas flowing in countercurrent, converting the same into ammonia, absorbing the ammonia and forming with it ammonium sulphate and then flowing into the liquor bath in the open or closed box in which the tower is set. The acid is preheated to a temperature of about 70 deg. Cent. The temperature of the liquor in the box is approximately the same. The residual gas that is not absorbed by the acid flows out of the tower at the outlet DA.

The coke oven gas liquor in the new process contains but very little hydrocyanic acid; hence this must be increased, which is accomplished most readily and economically by the following process: A part of the vapors from the towers, from the lower tower used to absorb the volatile ammonia or from the lime tower, is shunted off from the main line and led through a cooler, which is provided with a reflux condenser. This serves to separate the water vapor and the ammonia vapor, which is almost entirely free from carbon dioxide and hydrogen sulphide, is returned to the gas line. There is necessitated, of course, a certain change in the quantity of vapors fed to the distilling apparatus, but the result is an increased production of hydrocyanic acid gas from the coal, especially when it is dry. There is no increase in the consumption of steam, as the quantity of the gas liquor remains the same and as by far the greatest part of the steam fed to the distilling apparatus serves to heat the large amount of water present to the boiling point.

Formation of Methane

Tests were made with a gaseous mixture, corresponding to what would be met with in practice, and in addition to a conversion of hydrocyanic acid into ammonia amounting to a 94.5 per cent yield, there was also noticed the formation of methane gas during the process. This was due to the decomposition of the formic acid that is produced as an intermediate product during the conversion process. It is evident, consequently, that the hydrocyanic acid in the gaseous mixture, even when the latter first comes into contact with the acid sulphate liquor, is susceptible to considerable decomposition.

Influence of Hydrogen Sulphide

In the gaseous mixture, which enters the hydrocyanic acid recovery apparatus, there is always present an appreciable amount of hydrogen sulphide, and it is important to know what effect, if any, this impurity has on the conversion of the acid into ammonia. Contrary to what might be expected, it was found that the presence of sulphureted hydrogen in the gaseous mixture is without a doubt of assistance in the highest degree in furthering the conversion process. It was also determined that its presence prevents injurious by-reactions from taking place, particularly those that result in the formation of methane and hydrogen.

The gas liquors should not be stored very long before they are treated for conversion of their hydrocyanic acid content into ammonia, as otherwise the acid is changed into the thiocyanate by reaction with ammonium sulphide, and in this form cyanogen cannot be converted into ammonia. In plants that use horizontal coke ovens, the hydrocyanic content of the gas liquors is particularly high; it is less in the plants that use inclined ovens and least in those operating vertical ovens. The process appears to be particularly well suited for the distillation of waste wash liquors, which contain as much as 7 per cent by volume of hydrocyanic acid.

Hazards in Shipping Natural-Gas Gasoline

D. B. Dow, chemical engineer of the Bureau of Mines, has completed the field work outlined in his study of hazards in the shipping of natural-gas gasoline. One standard car and one insulated car were filled with gasoline, and record made of pressures developed within the cars, as well as the temperature range of the atmosphere and gasoline. The proposed regulations submitted by the Bureau of Explosives allow no gasoline to be shipped in standard cars unless the vapor tension of the product is below eight pounds. The present regulation allows gasoline of ten pounds vapor tension to be shipped in standard cars. Several tests were made to determine the loss which might be expected, due to weathering gasoline of ten pounds vapor tension. These tests indicate the loss will be in the neighborhood of 11 per cent.

A. G. A. Technical Committee Meets

Gathering Held in Chicago Makes Plans for Convention

A well-attended meeting of the managing committee of the Technical Section of the A. G. A. was held at the Congress Hotel, Chicago, March 14, at which the following members were present: C. N. Chubb, chairman, Davenport, Iowa; F. C. Weber, vice-chairman, New York City; J. W. Battin, Detroit, Mich.; H. S. Batten, Philadelphia, Pa.; J. A. Brown, Jackson, Mich.; R. L. Brown, Bureau of Mines, Pittsburgh, Pa.; R. C. Cornish, Philadelphia, Pa.; A. C. Fieldner, Bureau of Mines, Pittsburgh, Pa.; R. B. Harper, Chicago; J. G. Hart, Waukegan, Ill.; W. W. Husted, St. Joseph, Mo.; G. M. Johnson, South Bend. Ind.; Joseph Lucena, Syracuse, N. Y.; B. F. Lyons, Beloit, Wis.; George H. Waring, Grand Rapids, Mich.; L. J. Willien, Boston, Mass.; J. F. Wing, Boston, Mass.; O. H. Fogg, secretary-manager, New York City, and H. W. Hartman, secretary technical section, New York City.

In conformity to the policy adopted for the year of confining the section's activities to a few fundamental subjects, the work of the following main committees will comprise the entire material to be presented at the annual convention for the discussion of the members.

Committee on Carbonization and Complete Gasification of Coal

The chairman, L. J. Willien, Boston, Mass., reported his committee completely organized, with subchairmen appointed for the following sections: Operators' section, E. H. Bauer, Providence, R. I.: complete gasification section, R. G. Porter, Chester, Pa.; builders' section, J. H. Taussig, Philadelphia, Pa.; low temperature carbonization section, J. D. Davis, Bureau of Mines.

The main effort of the operators' section will be the preparation of standard methods and instructions for the figuring and reporting of operating results in coal-gas plants. Each year the carbonization committee has been confronted with the difficulty of securing operating results that are comparable, due to the lack of uniformity in the method of figuring operating efficiencies at different plants, and it is felt that the continued reporting of these figures is useless unless a degree of uniformity can be obtained in their preparation. The standard methods when prepared will contain full instructions as to how each figure shall be obtained, with specifications as to the minimum equipment required at all plants for the proper measurement of coal, coke and generator fuel used. Every effort will be made by the committee to eliminate all estimated figures from results reported and to see that proper corrections for holder pressure, checking of orifice meters, etc., are made at all plants where this has not been done in the past. This section will also include in its report up-to-date data on the operation of blue gas and producer gas plants for heating retorts and ovens.

The complete gasification of coal section has been organized to keep in close touch with developments in single-phase processes located at the following points in this country: Toledo, Ohio; Louisville, Ky.; Valparaiso, Ind.; Denver, Col.; Oneida, N. Y., and Terre Haute, Ind.

For developments abroad the committee will have the benefit of information on the Tully process gathered while in England by A. I. Phillips, service engineer of the A. G. A. J. D. Davis, of the Bureau of Mines, will keep the committee advised of developments in Germany and other parts of Europe.

The committee will also include in its work consideration of complete gasification in two-stage processes, as considerable economies are possible under present or probable B.t.u. standards in the operation of combined coal and water gas plants. This practice also offers the advantage of great flexibility in output and the disposition of the by-product coke in accordance with the demands of the coke market. In this phase of the work the committee will attempt to point out, under present conditions as to standards, the most economical B.t.u. gas to produce, and the extent to which complete gasification can economically be carried.

The builders' section is composed of builders of carbonizing equipment and will report, as in the past, on all developments in the design of each manufacturer's equipment.

The low temperature carbonization section, through its chairman, J. D. Davis, will keep in touch with any new development in this country or abroad. Developments leading to the commercial application of such processes are regarded as doubtful, but it will be the purpose to keep the industry advised of such developments as may occur.

Gas Plant and Production Committee

The chairman, George H. Waring, Grand Rapids, Mich., reported that a subcommittee on steaming stop-end horizontal retorts had been organized, with J. C. Hauschildt, of Davenport, Iowa, as chairman. The committee has arranged to conduct tests on the steaming of stop-end horizontals at Denver, Col.; Fort Wayne, Ind.; Fairfield, Iowa, and Millville, N. J.

W. A. Dunkley, of the Bureau of Mines, has been secured as a member of this committee, and will assist in the test to be conducted at Fairfield, Iowa.

A subcommittee has also been appointed, with C. W. Bradley, of Chicago, as chairman, on the use of a mixture of bituminous coal and coke as generator fuel in water gas sets.

The gas plant and production committee will also have the following papers prepared for the convention: "The Proper Scrubbing and Condensing Facilities in a Coal-Gas Plant and Their Effect Upon the Tar and Ammonia Separation and Recovery," by J. R. Wohrley, H. L. Doherty & Co., New York City, and "The Proper Scrubbing and Condensing Facilities in a Water Gas Plant," by J. A. Perry, the U. G. I. Company, Philadelphia, Pa.

Distribution Design Committee

The chairman, R. C. Cornish, Philadelphia, Pa., reported the following program laid out:

A further presentation of the Doherty ideal distribution system, by R. C. Griswold, New York City.

The preparation of figures for the presentation of a distribution system in which mains 4 in. and larger will be used, by B. V. Pfeiffer, Philadelphia, Pa.

A study of distribution pressures—both as to maximum and minimum pressures—to be allowed on low-pressure distribution with various qualities of gases and various methods of pipe construction; and specifications for high-pressure distribution work, particularly with reference to welded mains and services. This study will include a standard design of governor, governor pit and necessary equipment. G. T. Macbeth, of Mount Vernon, N. Y., will be in charge of the work.

J. D. Shattuck, of Chester, Pa., has been assigned to the subject of house governor design, including recommendations for their installation, safety seal, etc., and the design of governors for particular installations.

Chemical Committee

The chairman, Dr. J. F. Wing, of Boston, Mass., reported complete organization of the following subcommittees: Purification, W. A. Dunkley, chairman, Urbana, Ill.; disposal of waste from gas plant, I. T. Haddock, chairman, Cambridge, Mass.; deposits in gas pipes and meters, Dr. R. L. Brown, chairman, Pittsburgh, Pa.; testing and evolution of gas oils, Charles A. Lunn, chairman, New York City; co-operative analyses of coal and coke, A. C. Fieldner, chairman, Pittsburgh, Pa.

Of the above committees, it is planned to present the report of the committee on deposits in gas pipes and meters as the chief contribution of the chemical committee to the technical program at the convention. Reports of the remaining subcommittees will be presented to the members through the A. G. A. monthly and gas trade papers. An intensive effort will be made by the committee to determine the origin, composition and method of eliminating the gummy deposits which have proved a serious problem to many companies by accumulating in the meters and other parts of the distribution system.

It is planned to supplement the laboratory research tests on these deposits to be carried on at the Bureau of Mines by a study of the actual operating conditions of a selected list of plants which are troubled with the deposits, as well as a list of plants of comparable size which are not troubled with the deposits. This will include a study of the operation of the generating, condensing and purification apparatus, as well as a study of meter and meter-shop conditions.

W. A. Dunkley, chairman of the subcommittee on purification, announced that the program of research as laid down last year will be continued, including the following work:

Investigation of the forms of sulphur in oxide and the sulphiding reactions, by C. H. Stone.

Reports on costs of liquid purification plants in actual operation at Battle Creek, Mich. (Koppers process); Geneva, N. Y. (O'Neill process), and Chester, Pa. (Feld process).

Simplified rate of flow method for determining the activity of oxides for gas purification, designed by Dr. Powell, Bureau of Mines.

Correlating of laboratory and plant methods of testing oxides.

Study of methods for the removal of cyanogen and other impurities from gas, by Dr. A. R. Powell, Bureau of Mines.

Investigation of total sulphur, including data relative to the sulphur content of coals used, methods of manufacture, total sulphur content of gas before and mine extent to which this problem is serious in vamnie extent to which this problem is serious in various plants, by J. Craven, Chicago.

Continuing Committees

In addition to the work which will be presented to the convention, the section has continued the following activities, the committees on which will report to the members through the A. G. A. monthly and gas trade papers: Cast-iron pipe standards committee, Walton Forstall, chairman; consumers' meters committee, Joseph Lucena, chairman; refractory materials committee, W. H. Fulweiler, chairman; committee on compressed air for clearing gas piping, J. T. Griffin, chairman.

As a result of a questionnaire on laboratory facilities sent out by the 1921 chemical committee, the association has received many offers of co-operation in research work from technical universities and colleges throughout the country. It is proposed to take full advantage of the co-operation offered by the universities, both through the work of the technical section and of the general committee on co-operation with educational institutions, of which F. C. Weber is chairman.

Chairmen of all technical committees which will have research work to do were accordingly instructed to submit a list of their problems for university research, analyzed and divided so that this work may be parceled out to universities that are able to co-operate. It is felt that this co-operation will not only be of direct benefit to the industry but indirectly so in stimulating the interest of students in the gas business.

The research assigned to the universities may well be made the basis of thesis work for senior and graduate students as well as a means of supplying subjects for study in connection with the gas scholarships maintained at certain universities by State associations affiliated with the A. G. A. A strong effort will be made to encourage the establishment of further scholarships by State and district associations and to co-ordinate the work in all parts of the country by the allocation of a well-balanced program of research among the various scholarships so established.

Some Oil Statistics

The figures shown in the following are taken from reports as compiled by Government departments at Washington. Texas broke all records for oil produced in a single month, she having unearthed in January 1,631,000 bbl. Oklahoma is second with 1,600,000 bbl. and California third with 9,788,400 bbl.

Other States given in the report are Louisiana, 890,000 bbl.; Kansas, 2,697,000 bbl.; Wyoming, 1,639,000 bbl.; Arkansas, 1,100,000 bbl.

No other States produced as much as 1,000,000 bbl.

Advertise! But How?

Paper Presented at Illinois Gas Assocation Meeting

By CHARLES W. PERSON, Secretary Advertising Section, A. G. A.

Here is a question that probably concerns a considerable number of the manufactured gas companies of the country. For the most part, they are companies that cannot afford the services of an advertising agency or an advertising writer.

The solution of this question is a comparatively simple one, however. If managers will take advantage of the advertising facilities offered them by the manufacturers: if they will put their advertising problems squarely up to a State committee on public utility information; if they will call on their newspaper publishers and permit them to whip their advertising copy into shape for them just as the publisher does for other merchants in his town; if they will get in touch with national headquarters and ask us to help them, there will be no worry about "how to advertise."

The services here enumerated, those afforded by manufacturers, the public utility information committee, newspaper publishers and the national association are practically without cost We are a closely-knit industry or we could not offer co-operation like that. No gas plant manager with an advertising problem should have to search very far before he finds a satisfactory solution to it from one of his fellow workers; and in this category there certainly should be included the newspaper publisher, for he will be a ready and willing fellow worker if the gas plant manager will make a serious effort to cultivate his friendship and will take advantage of his advice in matters relating to both merchandise and good-will advertising. The "how" of advertising is the publisher's specialty. Let the gasman sit down with the publisher and tell him the facts and there will be no trouble with the pulling power of the advertising copy resulting from such a consultation. This solution is recommended by the American Newspaper Publishers Association, which has recently notified its members to come to the assistance of gas companies that are up against the "how" of advertising and lend them the most practical kind of help. Since the newspapers want to co-operate with us, let us go more than half-way to meet them. We couldn't keep better company if we tried.

All the talk on advertising will avail nothing, however, unless companies put an end forever to sporadic and so-called campaign advertising and make an annual appropriation for newspaper space, using that space persistently.

The fact is that to-day's advertising appropriation will determine to an extent larger than most of us realize just how big a slice of profitable business is going to come our way when the highly competitive buyer's market is in full swing.

Leaders in the gas industry know this to be only too true, for witness the effective national advertising that the manufacturers are doing and the newspaper space that is being used by those companies which have a strong aggressive sales policy backed by an equally aggressive advertising program.

There is nothing new in the combination of sales aggression and merchandise advertising. They go hand in hand. It is the normal way of doing business. The pity is that so many know this but so few put it into practice. Yet our regulatory bodies look favorably on strong sales and advertising work. Only recently the chairman of one of our best-known commissions intimated that it was up to the companies to sell themselves and their service to the people. He said he was heartily in favor of advertising and considered it to be a legitimate expense.

Advertising, therefore, needs no defense.

As merchandisers of gas service and gas-burning appliances, however, we are a greatly underadvertised industry. The result is a vast, unsold market. In the year 1920, for example, 140 gas company members of the American Gas Association whose total gross sales of gas, exclusive of appliances, was $98,665,000, spent $843,120 for advertising.

Mr. Person has presented some pertinent facts in this paper that will bear consideration. We join with him in the plea for an annual appropriation for advertising.—Editor.

What the Figures Show

In other words, as we have figured it out. 140 gas companies appropriated for advertising 85/100 of 1 per cent of their total gross sales of gas, or 85 cents out of every hundred dollars. This is not so bad—not nearly so bad as many of us would have believed before these figures were made public. But suppose we were sufficiently enlightened as an industry to spend one dollar out of every hundred dollars taken in. We would then find the 966 gas companies of the United States appro-

priating $3,840,000 for advertising—a sum that would put us on the advertising map in great big letters.

Of course, there are those who will laugh at an advertising appropriation as low as 1 per cent, but they are generally unfamiliar with the restrictive character of the public utility business and fall into the common error of comparing our business with the venders of tooth paste and chewing gum. We have nothing in common with the tooth paste and chewing gum people. Because they spend from 5 to 25 per cent for advertising, is no reason why we should. How much would they spend with a five-year turnover, commission regulation and a maximum return of 8 per cent? Nothing at all—they couldn't survive.

An advertising appropriation of 1 per cent, therefore, would put us in the clear. With $3,840,000 to work with through the medium of newspaper white space, with copy full of facts and with each message specific and aimed at specific prospects—and all of this backed up by the national advertising of the manufacturers—we could make a big dent in the unsold market and cash in on the business that is waiting for us if we will only go after it in the right way.

We will never attain our real sales momentum until companies make a regular and definite appropriation for advertising. One per cent of the total gross sales of gas is entirely reasonable. It may be figured out in other ways—the new-business department may take care of the appropriation—but no matter how it is arrived at, it should at least measure up to 1 per cent of the sales of gas—the ultimate commodity that is merchandised.

We speak of a sales policy. There can be no sales policy in a company that fails to make an annual appropriation for advertising and new-business development. Such a company is without a policy. It is simply getting along—that's all.

Some Gas Notes from Great Britain

Number of Consumers Steadily Increases

By T. SINGTON

In London the gas industry has so completely recovered from both the after effects of the war and coal strike, that it has been found possible to reduce the price of gas from the commencement of this year to the extent of 26 cents per "therm," which is the new system of charging consumers. It means a saving to them of approximately $2,880,000. It is noteworthy that in spite of the competition of electricity the number of gas consumers steadily increases; the sale and renting of gas stoves, used instead of open fireplaces, increase by leaps and bounds, and last year in London alone the increase was just short of 40,000. The enterprise and go of many gas undertakings is very striking. To mention one only, the London Gas Light & Coke Company, which draws its supplies of coal from the far end of the Kingdom, possesses its own fleet of steamers, a source of great economy, making it entirely independent of outside transport, both sea and railway.

The chairman of that great London company recently commented on alleged increased danger of gas. He said, "I have noticed that there has been a great deal of prominence given in the press to the composition and quality of the gas supplied, and the suggestion has been made, that the gas now being supplied is a danger to the public. There is absolutely no ground for this statement. Not only in the interests of the shareholders in gas undertakings throughout the country, but also for the purpose of restoring the confidence of consumers of gas, who may possibly be alarmed by the comments, which have appeared in the press, I feel it my duty to place on record the true position. Gas companies in Great Britain have never been under any restriction with regard to the proportion of carbon monoxide, which the gas supplied by them should contain. Only six months ago the question was reviewed in all its bearings by a strong committee of responsible and independent scientific men, who decided that it was neither necessary nor desirable to impose any restrictions on the gas industry in respect of the percentage of carbon monoxide in the gas. The percentage of carbon monoxide in the gas now being supplied by the company is practically the same as before we declared war; it is quite untrue to say that recent accidents have been due to any alteration in the composition of the gas.

"It has been suggested that many accidents are caused by reason of the gas supplied being odorless. This is absolutely incorrect. It is true that carbon monoxide may be odorless in itself, but pure carbon monoxide is not and could not possibly be supplied by gas undertakings by itself, as it is mixed with several times its volume of other gas of considerable pungency, from which it cannot be separated in the process of distribution It is inconceivable, therefore, that an escape of gas with its unmistakable smell could avoid detection. Any suggestion to the contrary is absurd, but it is one that has been repeatedly made. Accidents due to the escape of gas are lower now in proportion to the number of users of gas than they have ever been before, as the following details show:

"Fatalities due to gas do not exceed two per annum per million of the population in England.

"Fatalities due to railways are twenty-two per annum per million of the population.

"Fatalities due to street accidents in London are 190 per annum per million of the population of that city.

"Clearly these figures show that there is little or no risk in the use of gas with ordinary care.

The Value of Our Coal

The annual report of the Secretary of the Interior gives a good idea of the size of the United States' coal bin and the wealth represented by its contents. It is estimated that there are Government holdings of ten billion tons of bituminous coal, which at a royalty of 10 cents per ton would yield a billion dollars to the Government; thirty billion tons of sub-bituminous coal, from which an 8-cent royalty totaling $2,400,000,000 is estimated; fifty tons of lignite, on which a royalty of 5 cents, or a total of two and one-half billion dollars. It is said that these calculations do not include coal on railroad lands, on private grounds and on private lands in the public land States not developed. It is estimated that the Government holds in Alaska twenty billion tons of coal of all grades.

Developments in Gas Technology

Important Information Gathered from All Parts of the World

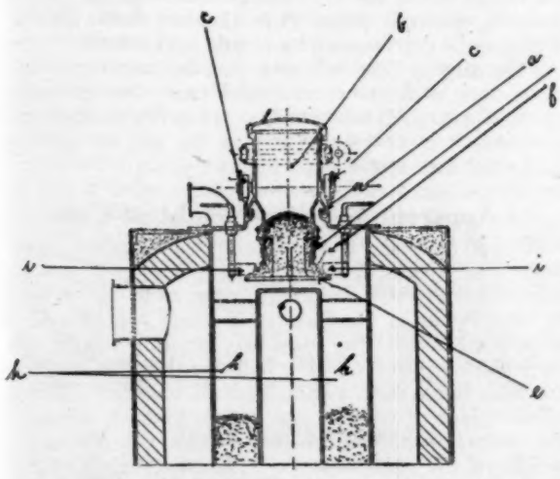
By ISMAR GINSBERG, B.Sc., Chem. Eng., Associate Editor

Carbureted Water Gas

French Patent No. 515,181 is concerned with a process of making water gas which is used in Belgium. This process is characterized by the introduction of oil in the vesicular condition into the gas generators. The purpose of atomizing the oil is to secure the closest possible contact with the incandescent coke. This also results in a more perfect transmission of heat and, as a consequence thereof, the decomposition of the oil is more complete and there is a greater production of gas with a lower production of tar. The usual carburetors and superheaters are not required in such a plant, and instead injectors are employed which pulverize the oil and introduce it into the very midst of the generators. The number of generators is in accordance with the quantity of gas that it is desired to produce, and likewise with its quality; that is, its calorific and illuminating properties. In this process mixtures of hydrocarbons, such as benzine, crude petroleum, etc., are used.

Loading Arrangement for Gas Producer

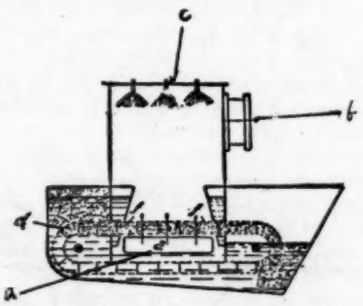
The details of this device are seen in the following diagram. The top cover of the gas producer has a round support a, which is built to form the guide rails for the charging container b. This is supported on wheels c which rest on the rails. The lower part of the charging device carries a cut-off plate e, which closes the bottom opening. Between the walls of the container and this plate e there is a ring-shaped opening f. The cut-off plate e projects over the gas outlet tube



h, so that the coal, held back by the plate, is delivered directly into the tube. The removal of coal from the delivering container is accomplished during its rotation by means of the projecting arms i which scrape off some of the coal as the device turns around. These arms may be adjusted from the outside by turning a lever. The regulation is carried out in such a manner that just the desired quantity of coal is scraped off the plate e by the rotation of the delivery or charging device. Regulation is accomplished not only by movement of the arm i but also by the rate of rotation of the charging container. This device is patented in Germany (see German Patent No. 331,153).

Circulating Gas Filter

The circulating filtering arrangement is provided automatically with just the proper quantity of crude oil, tar, heavy oils and the like, which act as the washing



fluids, so that the pores of the filter are closed up with the washing medium. The gas which is at a temperature above the dew point with respect to the washing liquids is passed through them, and the exhausted filtering medium is removed automatically. Combustible materials, such as earthy lignite or peat, may be used as the filtering mass, which are distilled after use to recover the wash liquors. From the diagram the general working of the apparatus may be seen. The gas enters through the opening at a and passes through the circulating filter. The wash liquors are sprayed over the filter through the atomizers c and the gas leaves in a purified condition through the outlet at b. A bucket arrangement with perforated bottom receives the new filtering mass in one side chamber d and discharges the spent filtering material, moving slowly forward, into another lateral chamber e. Thence the spent mass is removed from time to time or else continuously. At the points of entrance and exit of the bucket arrangement into the liquid reservoir, shown as f in the diagram, there are provided the proper stuffing boxes so that no liquid can drain through. (See German Patent No. 331,321.)

Lignite Tar Products

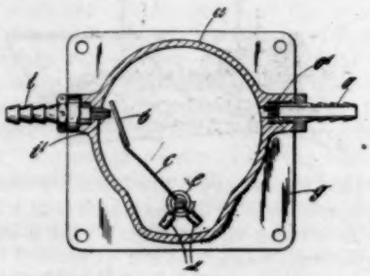
One product obtained from the distillation of lignite tar is known as neutral oil. This has been investigated very carefully and its properties determined. The oil was found to contain principally naphthene and hexadecane. Another product, which is characterized as being soluble in alkalies, was found to consist mainly of a mixture of cresol and higher phenolic bodies. For further details see the *Berichte der Deutsche Chemische Gesellschaft*, volume 54, pages 2565 to 2568.

Gas Production in Vertical Furnaces

The Societe du four vertical continu, Systeme J. Pieters of France, has been granted French Patent No. 515,485 on an apparatus which permits the easy production of distillation gas in vertical furnaces of considerable height. In these furnaces material in a very fine state of subdivision, which is permeated with difficulty by gases, may be treated successfully. The evolution of gas takes place in two distinct directions. In the first place a mixture of water vapor with a small proportion of combustible gas is raised, as is usual, to the upper part of the furnace, while the second gaseous mixture, which contains the major part of the combustible gas, is caused to impinge on vertical walls at the end of the furnace, at different points which are arranged advantageously on the non-heated parts of these walls. The individual gas outlets from the different furnaces in the installation are united into one large main, which conducts the gas to the by-product recovery plant.

Flow Meter for Gases

In United States Patent No. 1,401,887 there is described an apparatus for measuring the flow of gases. This apparatus is seen in the following cut. It consists essentially of an inlet nozzle i, an outlet nozzle o and a plate mounted on an arm which is attached to a movable spindle. The gas, entering the meter, impinges against this plate b and causes it to move in accordance with its rate of flow. The spindle is counterbalanced with weights. The apparatus may be standardized so that different rates of flow may be read off a properly graduated scale.



Purification of Illuminating Gas

The Societe du Gas de Paris has patented a process of purifying illuminating gas which consists in washing the same in the regular type of gas washer with a solution of an iron salt and milk of lime. The gas is then treated with the solid residue that is obtained from the filtration of this purifying composition and which has been subjected to the oxidizing action of the atmosphere. Before use this mass is mixed with sawdust. For further details see British Patent No. 164,310.

Treating Gas-Purification Residues

The process, which is the subject of German Patent No 346,063, is concerned with preparing and reactivating the spent residues obtained in the purification of illuminating gas. Sulphur is recovered from these residues by the use of superheated steam. The mass left behind in the purification boxes, after being first treated with water, is then subjected to the action of a current of steam at a temperature above 200 deg. Cent. and under a pressure of little more than an atmosphere. After this operation is finished, the mass undergoes treatment with alkalies for a short space of time.

Ammonia Determination Without Distillation

A quick, accurate and easily carried out process for determining the ammonia content in ammonium sulphate and other salts without the necessity of distilling the ammonia gas is described in the German journal, *Gas und Wasserfach* volume 64, pages 770 to 774. The process is based upon the well-known reaction in which ammonia is converted into hexamethylene-tetramine by means of formaldehyde. In the course of the reaction the mineral acid, with which the ammonia is combined in the ammonium salt, is set free, and this is then titrated with standard alkali. In order to obtain accurate results the formaldehyde must be present in excess, phenolphthalein is used as an indicator and the formic acid, which is always found as an impurity in formaldehyde, must be neutralized.

The analytical method is somewhat as follows: About 1.7 grams of the ammonium salt is dissolved in freshly boiled distilled water in a 250-c.c. flask and 25 c.c. of this solution are pipetted into an Erlenmeyer flask. In another flask 5 to 10 c.c. of ordinary commercial formalin solution are diluted with 20 c.c. of freshly boiled distilled water and neutralized with tenth normal caustic soda solution, using phenolphthalein as an indicator. The two solutions are now combined, shaken thoroughly and titrated with standard caustic soda solution until a permanent rose color appears in the solution. The ammonia corresponding thereto may then be found by mathematical calculation.

Pyridine from Gas

Contrary to the general assumption that the greatest part of the pyridine content of gas is absorbed by the sulphuric acid in the ammonia saturators; that is, that this acid has the property of absorbing and holding pyridine as well as ammonia, the writers of an article published in the *Berichte der Gesellschaft fuer Kohlentechnik*, volume 1, pages 42 to 43, have shown that pyridine may be driven out of a strong acid solution by heating the same. This indicates that the larger part of the pyridine is still to be recovered from the gas after it leaves the ammonia saturators. In order to obtain such pyridine, it is necessary to give the gas an additional cold sulphuric acid wash.

Apparent Specific Weight of Coke

A new method of determining the apparent specific gravity of coke is given in the *Berichte der Gesellschaft fuer Kohlentechnik*, volume 1, pages 23 to 25. A sample of coke is cut in the form of a rough sphere. This is then dried in a drying oven to a constant weight. It is then dipped into a paraffin bath, so that the surface of the coke is covered with a layer of paraffin. The paraffined piece of coke is then weighed again, whereat by the deduction of the first weight there is obtained the weight of the paraffin layer. The next step is to weigh the sample under water. The weight under water of the paraffin layer on the coke may be determined from the absolute weight of the paraffin and its specific gravity. This is subtracted from the weight of the entire sample under water, and by the ordinary mathematical calculation, the apparent specific gravity of the coke is obtained.

What a Gasman Stands For

Some of the Things He Represents in the Life of the Community

"I do not know what I am going to do for my life work," said Jimmie, "but I do know that I will never be a gasman."

This from Jimmie Jensen, son of the president of the Midville Gas Company. Jimmie was home for the Easter holidays, after his first term in college, where his fond parents had sent him to be "finished." This, to E. N. Lightener, the editor of the Midville *Journal*, the old-time friend of Jimmie, and his companion on many a fishing and hunting trip.

E. N. looked Jimmie over, as they sat together in his office, and he was just a little afraid that they *had* finished him, as a gasman, at least. This was to be regretted, because Midville needed a good gasman and Jimmie, who had worked around the plant and with the men in practically every department of the business, had shown abilities that promised well.

So E. N., for the sake of his friend and for the sake of the community, determined to make an effort, at least, to straighten Jimmie out.

"Don't you like it?" asked he.

"Well, I don't dislike it. I think it is lots of fun to do the work, and I think it is great to develop any of the sales campaigns we put on. But dad says he doesn't want me to be a gasman."

"Yes. And your ma?"

"She is with pa. She wants me to be a professional man, and have a career that is 'worth while," as she puts it. She wants me to be a doctor, and heal diseases, and relieve the distressed, and save lives by my skill. Or a teacher, and train the minds of men, so they will become great leaders in the world. That idea rather appeals to me. Or, she says, for me to be a preacher would fill her fondest hopes for one of her boys. I have found out at college that it is not the biggest boob, nor the smartest guy, that gets through the lines. When a fellow bucks the line it is the pep, or grit, or staying powers, or whatever you want to call it, that gets him through. And ma says that is the thing the world needs most."

"Well, I guess you are right about that. And a man needs it to be a gasman, as well as to be anything else. I never thought Jimmie Jensen would be a quitter, and I don't believe it now. But if you want to be a minister, and really do the work that a sure enough one needs to do—go in and out among his people and be their friend and guide—I'm for you."

"But I don't want to be. I'm not fitted for that work, and when I get busy in doing things around the gas plant I forget there is anybody else in the world."

It's a Worth-While Job

"That is all right, then. As for those other guys, you already have a better and a more worth-while job than either of them."

"I don't see how you make that out. Pa says that the gas business is the last business in the world that he would want one of his boys to follow. To get me out of it is why he is sending me to college."

"Well, it has not been such a bad business for him. When he struck this town, just after you were born, he hadn't a dollar to his name, and he came to me to get a job to buy the food to keep the family from starving. He hadn't very much education, and no trade, and his accumulations had been swept away by a fire, and he was 'flat on his back,' as the saying is. I got him a job with the gas company as a ditch digger, and he has been with it ever since. He is president now, and the principal owner of the stock. He has made a living, and put his children through high school, and has the money to put you through college. That doesn't look bad to me."

"It doesn't to me, either. I know lots of men who had twice dad's start who have not got on half as well. But when dad thinks back to those ditch-digging times, he declares he doesn't intend to have any of his children go through any such experiences, if he can help it."

"That is where your dad is wrong. Those three years of ditch digging gave him the physical strength that has been at the bottom of his success. It was to your dad what Teddy Roosevelt's bronco bustin' was to him. It made him a man. And his sticking to it gave him the confidence of the men in this town who finally made him the president of the gas company. But his son doesn't need to dig ditches to stay in the gas business. He can start almost where his daddy quit, although you certainly have a big advantage in that you have worked through the whole plant, and can do things about as well as any man on the job. But the main thing that is wrong with you is that you do not think you have in the gas business a worth-while job."

"Well, I don't see much in it; that is a fact. A fellow can make a living at almost anything, but he likes to feel that he is of some consequence in the world, and that what he does is really worth the while. Now, the doctor—"

"Yes, the doctor cures diseases; you, as a gasman, prevent them. And 'an ounce of prevention is worth a pound of cure.' The doctor relieves suffering; you remove the causes that make men suffer. The doctor saves lives that are about to be snuffed out; you extend the term of life, and make that life happier and brighter for thousands."

"Do I? How do you make it out?"

"Why, don't you know? What is the cause of most diseases? Dirt. What is the greatest enemy of dirt? Hot water. But who is going to fool about hot water if he has to wait until it is heated up in the old way—on the cook stove? They don't. They go dirty, and then the doctor is called in. I tell you, Jimmie, that every time you put in a hot-water heater you are doing a public service, and are extending the life record of the race. The doctor may be doing a big thing to save the wreck of a disease-shattered life; but you are keeping that life off the rocks and preventing it from becoming a wreck."

"I guess you are right, but I never thought of it in that way before. I just thought of it as another job."

"Sure you did. But here is some more. Once a

month or once a year the doctor is called in to relieve suffering. But the hot-water bottle relieves more pain in a year than all the medicines the doctors poke down our throats. Think what it means to have instant hot water in the case of a little baby. And the reviving effect of a hot bath at night after a hard day's work. Then just think of what it has meant to your mother to have that new gas range in the house, instead of the old cook stove over which she used to sweat."

"It sure has made a lot of difference with her. And to think that I never thought of it in connection with the gas. I have thought of it only in connection with the stove."

Public Service Really Public Benefaction

"Well, you see it now. The range would be worth nothing without the gas, and you can't have gas without a gasman. Why, the biggest benefactor in any community is the public service man, who renders good service to that community. And, as I said, he serves all the time, while the doctor only gets around once in a year or so."

"All right for the doctor. I'll pass him up. But what about the teacher? I have gotten to think a lot about the great things those professors are accomplishiug up at the colloge."

"And you are absolutely right about it. Their work is important, and we could not get along without it. But neither can we do without that of the gasman. But look here. You have learned that it is necessary to have a sound body in order to have a sound mind. When you promote health you are promoting the intellectual life of the community. You are laying the foundation for the intellectual life that is to be built; and you know that the foundation is one of the most important parts of a building. But there are some direct benefits to the intellectual life which come because of the gasman. Now time is one of the most essential elements in getting an education."

"I guess I know that. If I had never known it before I went to college, I surely would have found it out there. Why, give me time enough, and I can master almost any study."

"You are right. Now take your mother. How many hours a day does she save by having that new gas range?"

"On an average, three hours a day, at the least. I guess I see what you are driving at. You mean that those three hours a day, twenty-one hours a week, which she doesn't now spend over the cook stove, are saved to her so she may read, or study, or sit down and think, or go to the clubs or otherwise improve her mind."

"Bright boy! That is it, exactly. And that when you, as a gasman, save a woman that much time, you are adding to the intellectual progress of the community."

"Gee! Twenty-one hours a week. That is just the time that I spend in class at college. And to think that that new range is giving to my mother for her improvement as much time as I am spending in class for my education."

Education of Mothers Mighty Important

"Yes, and the education of the mothers in this country is about the most important thing going on. Too often it has been the case that the mother came out of the school, and busied with the household affairs, never had a chance to improve herself. That was an incalculable loss, for, somehow, the things that our mothers tell us stick longer than those taught by any other person. That is why it is so important that she should have her chance. Then there is some time save dto you or your dad that was spent in carrying coal and taking out the ashes."

"I'll tell the world."

"And there are a lot of ways in which your gas improves the morals of a community, if you would only take the time to study them out."

"Well, I can tell you some of them, now that I have begun to think of the benefits of the gasman. Our professor told us that there was a very close connection between the lighting of cities and the crime record—that to light up a section meant to decrease the crime in that section. Better than the police, he said. But I never thought that, as a gasman, I was reducing crime and maintaining the law, and upholding the Government. Then there is the good-will that comes of comfort and conveniences. One of the lecturers said that environment had a lot to do with the morals of people—that if a man was cold, he was apt to be crabbed, and that when you warmed him up physically, he would thaw out spiritually. If that is so, think what a public benefactor the man is who invented those new gas heaters we sell."

"You have it, all right. Keep on thinking along these lines, and you will be a gasman yet."

He'll Be a Gasman

Oh, I'll be one, never fear. But if I am to give my life to it, I guess I'd just as well come home from college. There is no particular need of me spending all that time on things I will not need in my life's work."

"That is where you are wrong. Even if you know all about that gas plant, which I maintain you do not, there is plenty of reasons why you need to go on through college to fit yourself to be a gasman. You have only got a start on your education—in chemistry and the other sciences, and if you are really going to be a gasman through the years to come, you will need all these."

"I don't see why."

"Well, you are not going to be just a manager of this plant here. You are to be a gasman—one who knows gas from a to izzard. You want to be so well versed in gas that you can go on up in the industry and take a top job in the biggest plant in the country. Or, if you don't want to leave Midville, and I don't want you to, you can get to be the 'gas doctor,' so to speak, and go all over this part of the State, doctoring up sick plants. There sure is great need of such a man, and there is big opportunities in it to make money, and be of immense assistance. Take some old run-down plant that has been mismanaged, put it into shape physically and financially, and start it out on a money-making career, and you can get a good big slice of stock in the concern. Keep it up for twenty years, and you are the manager of a whole chain of gas plants, just as your uncle is of that chain of groceries that has made him a fortune. See?"

"I sure do. And when I get them to going, and come home, driving my car, don't you forget it, I'll come by this old shop of yours and pull you out of it and run you up to the lake for another good fish. But if I am going to be that kind of a gasman, I'll have to dig down deeper into those studies I have been just fooling with up at the college. It is worth while, all right, and a real man's job."

As the Journal Views It

The Government Will Intervene

Indications are, as this issue goes to press that the strike in the coal industry will be called as per schedule on April 1, but as predicted in the JOURNAL last week it is probable that the Government through different departments will act to protect the public, which means that gas companies will be able to obtain a sufficient supply of coal to maintain operation at normal. Those who are experienced in the gas business confidently looked forward to this step by the Government despite the utterings of those who seem in no way familiar with what a gas company coal pile resembles.

Information which reached the JOURNAL during the past few days, and which is absolutely authentic, is to the effect that the coal strike most certainly will not last over three weeks, if it extends for that length of time. It is said that agreements are being reached each day between miners and operators and that while it may take that length of time for them to be settled so far as minor points are concerned that there is little difference between the negotiators.

Men prominent in the coal industry have been working quietly to bring about a settlement of the strike and despite the statements of defiance that have been issued to the newspapers by the miners they are not averse to a settlement on terms that will be more equitable than the agreement which is about to expire. The miners have had experience in being defeated, as witness the situatoin in West Virginia last year and furthermore, support from many strong unions which was confidently expected has not been forthcoming. In fact, one of the most powerful labor bodies in the United States, it is said, turned an extremely cold shoulder to the proposition of support.

A strike by any industry under present conditions simply means the weakening of unionism in this country and this the far-sighted leaders of the laboring men well realize. There has been a decided reaction against the demands of certain classes that war time wages be maintained, for it is becoming more generally realized that this is one of the chief factors in throttling the resumption of normal business conditions. The unemployment situation also is a factor that union men would do well to consider, for the condition is as true to-day as ever that any man or group of men can be replaced. No one is indispensable.

So far as the gas industry is concerned there is no immediate cause for worry, although each operator will, of course, take such steps in protecting his public as prudence dictates, always provided that they are financially able to do so.

Extending Our Service

From a reader has come the suggestion that the AMERICAN GAS JOURNAL make available the various cuts that are used from time to time to illustrate the different articles. This reader points out that often these cuts can be used by companies to illustrate their advertisements and to add to the value of the appeal and unless this service is extended by this journal that these materials can never be used.

The AMERICAN GAS JOURNAL will gladly furnish to any reader any cut at any time without expense and will co-operate in any other way that is desirable. The readers have only to ask for the cut, which will be forwarded at once. We will be glad to render this service.

A Step Forward

The announcement made by Dean Richards of the University of Illinois that a four years' course in gas engineering will be established should be received with a great deal of interest by the gas industry, for it means a decided step in advance. An interesting feature of the announcement was the statement that Samuel Insull, president of the Peoples Gas Light & Coke Company, of Chicago, had offered to place at the disposal of the university a complete gas plant. Charles A. Munroe, vice-president of the Peoples company, in describing the co-operation that could be expected declared that not only would a water gas plant be placed at the disposal of the students but also that actual experience would be given in the operation of a modern coke oven plant.

To make the course more desirable the Peoples company also offered to reimburse the students for their expenses while they are engaged in this work by paying wages in proper relation to the work done.

In commenting on this new course, Dean Richards stated that he hoped that the gas industry would be sufficiently interested to herald the movement throughout the country and to this wish the AMERICAN GAS JOURNAL adds its desire that every company extend all possible co-operation.

The co-operation that is being extended by Mr. Insull through the Peoples company also is a source of gratification, for it shows the keen interest that is taken in the future of the industry. If this movement becomes widespread and other companies also offer their facilities to Dean Richards and his students so much more valuable will become the work and the benefit that will accrue to the industry will be increased. Decidedly this is a movement in the right direction.

Consumers Are Reasonable, Says P. S. C.

Public Relations Department Makes Report

How a public relations department of a State Commission may be a definite factor in increasing good fellowship between utilities of a State and their consuming public is set out clearly in a recent report from the public relations department of the Indiana Public Service Commission, which has just been sent to hundreds of utility companies throughout Indiana.

"In general, this department has found that the public is entirely reasonable in its demands, and that the desire of the consumer is for good service, for which he is entirely willing to pay an adequate rate," says the report, and it continues in behalf of the utilities that "the experience of this department has been gratifying in that it has found that utilities generally are aware of the fact that their first duty is to give good service and to satisfy the consumer."

The report follows:

"This department (public relations) believes that the greatest service it can render the public is by bringing about a proper relation between the utility on the one hand and the consumer on the other. This relation can only be brought about by informing the consumer of the problems and trials with which the utility must contend in order to give service—problems and trials which are inherent in the very nature of the business conducted by the utility—on the one hand and to convince the utility that every doubt must be resolved in favor of the consumer, on the other; that only the utility which renders adequate service can receive an adequate rate, and that courtesy and forbearance are the accompaniments which alone can render service satisfactory.

"It is highly desirable that each consumer acquaint himself in a general way with the methods of production of the utility products which he is purchasing. The larger telephone companies, realizing this, are encouraging civic and mercantile organizations to visit their plants and are endeavoring to bring to the knowledge of the public an understanding of their work and their problems. This practice is highly commendable and should be used by other utilities.

"In general, this department has found that the public is entirely reasonable in its demands and that the desire of the consumer is for good service, for which he is entirely willing to pay an adequate rate. He objects to paying for adequate service and receiving service which is inadequate. He objects to discourtesy and to the practice still employed by a few utilities of sending from officer to officer and from department to department, those who desire to make complaints. He objects to standing in line for an unduly long time in order to pay his bill. He objects to the reluctance displayed by some utilities to offer explanations of charges that appear to him to be obscure. He objects to the attitude a few utilities display of believing the consumer incapable of understanding their problems, and their difficulties.

"Occasionally, it is true, a consumer takes an unjustifiable and unreasonable attitude and assumes that all utilities are attempting to overcharge him on the one hand and to lower the standards of his service on the other. The number of consumers of this type in comparison to the entire number of consumers of utility products is negligible.

"The experience of this department has been gratifying in that it has found that utilities generally are aware of the fact that their first duty is to give good service and to satisfy the consumer; they have found that courtesy pays and that no credit is given them for good service unless accompanied by courteous treatment. Many of the larger utilities have established service departments to whom the complaining consumer is directly referred and they have so arranged their collection department that at busy times a larger number of receiving windows is available in order that no customer need waste much time standing in line to pay his bill."

State University Will Teach Gas Engineering

Urbana, Ill.—A course in gas engineering with a complete gas production station as an experimental plant is to be established by the University of Illinois to meet the demand for technically trained men to enter the manufactured gas industry, according to an announcement of Dean C. R. Richards of the College of Engineering.

In announcing a four-year curriculum, Dean Richards made public that Samuel Insull, president of the Peoples Gas Light & Coke Company, of Chicago, had offered to place at the university's disposal a complete gas plant. Mr. Insull's action follows the offer of co-operation made before the meeting of the National Educational Association, where he made a plea for more practical education of university and college students. In accepting the offer Dean Richards said:

"I hope that the gas industry will become sufficiently interested in the curriculum to herald it to the country. The gas industry has become one of the most important of the nation and with the increasing demands for concentrated, economical fuel, the industry's demand for technically trained men will correspondingly grow."

In outlining Mr. Insull's offer of co-operation, Charles A. Munroe, vice-president of the Peoples company, wrote Dean Richards that "100 per cent co-operation can be expected from the gas company," and added:

"The Peoples Gas Light & Coke Company will furnish employment to a large number of the student body during the vacation time where they can have actual experience in and around gas plants.

"It will turn over a complete gas production station as an experimental plant, so that the entire class can be moved to Chicago and the plant experimented with under actual operating conditions, using various grades of oil and various kinds of fuel.

"We would also consider contributing sufficient money to reimburse the student body for their expenses while they are engaged in such experiments. This could be done by paying them wages in some proper relation to the wages paid the class of labor which they would displace.

"In addition to the water gas plant, we are indirectly interested in a very modern coke oven plant, and in connection with this there have been constructed experimental ovens. It is quite probable that arrangements could be made for the use of these ovens for experimental work provided you desire to conduct your experiments along the line of coking of coals rather than the improvements of carbureted water gas practice."

Public Utilities Securities Market Report

Prices of Representative Gas Bonds

(Quotations furnished by The National City Company)

Company	Issue	Maturity	Mar. 23, 1922 Bid	Asked
American Lt. & Trac. Co.	Five Year 6s	May 1, 1925	104½	106
Brooklyn Union Gas Co.	First Consol. 5s	May 1, 1945	91½	92½
Columbia Gas & Elec. Co.	First 5s	May 1, 1945	91½	92½
Consol. Gas, Elec. Lt. & Pr. Co. of Baltimore	First Ref. 7½s	Dec. 1, 1945	106	107
Consol. Gas, Elec. Lt. & Pr. Co.	General 4½s	Feb. 14, 1935	86½	87½
Consol. Gas Co. of New York	Sec. Conv. 7s	Feb. 1, 1925	107½	108
New Amsterdam Gas Co.	First Consol. 5s	Jan. 1, 1948	74	78
Denver Gas & Elec. Co.	Gen. (now 1st) 5s	May 1, 1949	91	93
Detroit City Gas Co.	Gold 5s	Jan. 1, 1923	98	100
Equitable Illum. Gas Lt. Co. of Philadelphia	First 5s	Jan. 1, 1928	95	98
Hudson County Gas Co.	First 5s	Nov. 1, 1949	87	89
Laclede Gas Light Co.	Ref. & Ext. 5s	Apr. 1, 1943	86	87
Louisville Gas & Elec. Co.	First & Ref. 7s	June 1, 1923	99½	100½
Michigan Light Co.	First & Ref. 5s	Mar. 1, 1946	85	88
Milwaukee Gas Light Co.	First 4s	May 1, 1927	88½	90
Pacific Gas & Elec. Co.	Gen. & Ref. 5s	Jan. 1, 1942	88	88½
Pacific Gas & Elec. Co.	First & Ref. 7s	Dec. 1, 1940	104	106
Cal. Gas & Elec. Corp.	Unif. & Ref. 5s	Nov. 1, 1937	94½	96
Peoples' Gas Lt. & Coke Co.	Refunding 5s	Sept. 1, 1947	86½	88
Chicago Gas Lt. & Coke Co.	First 5s	July 1, 1937	92½	93½
Portland Gas & Coke Co.	First & Ref. 5s	Jan. 1, 1940	87	89
Seattle Lighting Co.	Refunding 5s	Oct. 1, 1949	80	82
Southern California Gas Co.	First 6s	Nov. 1, 1950	94	98
Utica Gas & Electric Co.	Ref. & Ext. 5s	July 1, 1957	87	90
Washington Gas Light Co.	General 5s	Nov. 1, 1960	90½	91½
Western States Gas & Elec. Co. of California	First & Ref. 5s	June 1, 1941	87	89

Gas Earnings for January

Gross earnings of the General Gas & Electric Company and subsidiaries for January amounted to $1,051,175, compared with $1,015,383 for January, 1921. Net after taxes was $309,018, compared with $354,764 for January, 1921, an increase of $54,253.

Combined income of the company and its subsidiaries for the twelve months ended Jan. 31, 1922, shows gross of $11,492,085, with a net after taxes of $3,123,217; non-operating income was $160,593, making a total income for the period of $3,283,810.

After all charges, including interest on income bonds and dividends on preferred stocks of subsidiary companies, balance was $472,992, equivalent to 18.88 per cent on the $2,500,000 cumulative preferred outstanding.

Seeks Authority for Stock Issue

Madison, Wis.—The Wisconsin Gas & Electric Company, operating at Milwaukee, has applied to the railroad commission for authority to issue $252,000 common stock and $500,000 preferred stock, to meet costs of extensions and improvements. The hearing will be scheduled after ten days.

To Spend $955,000 on Improvements

Albany, N. Y.—The Municipal Gas Company of Albany announces that it is planning to spend $955,000 in the near future on electrical improvement and has filed an application with the Public Service Commission for authority to issue thirty-year 5½ per cent bonds to finance the proposition.

Plan Capital Increase

Scranton, Pa.—Stockholders of the Scranton Gas & Water Company have been called into special session for May 2 to vote on a proposed increase in the company's capitalization from $4,000,000 to $10,000,000. Worthington Scranton, president of the corporation, stated that stock of the Gas & Water company had been issued to the extent allowed by the corporation's present capitalization.

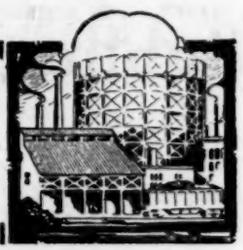
The proposal to increase that capital by 150 per cent is made, Mr. Scranton declared, to provide for any need which may arise.

The present capitalization of the Scranton Gas & Water Company is represented solely in common stock. Virtually all of the issue is held in Scranton and the holders are comparatively few. Mr. Scranton would not say that a stock dividend would be issued to cover the increase in capitalization, should the proposal be sanctioned by the stockholders at the meeting on May 2.

$2,000,000 Bond Issue

San Francisco, Cal.—The Los Angeles Gas & Electric Corporation has applied to the Railroad Commission for permission to issue $2,000,000 par value of its series "D" general and refunding mortgage gold bonds, and to sell and deliver the bonds from time to time at a price not less than 96 per cent of par, together with accrued interest. The proceeds are to reimburse the treasury for addition and betterment expenditures this year.

NEWS OF THE GAS INDUSTRY



Wisconsin Associations Consolidate at Annual Meeting

Headquarters of New Body to Be at Madison, Wis.

Milwaukee, Wis.—"Taxes upon gas, electric and street railway companies have increased fully 450 per cent since 1910, whereas the valuation of these companies has increased only 200 per cent," said E. J. Brabant, statistician for the Wisconsin Tax Commission, at the joint session of the Wisconsin Gas and Electric Association convention in the Hotel Pfister Thursday afternoon.

"In 1910 these utilities paid $548,500 in taxes. For the year 1921 they were called upon to pay $2,473,000, or four and one-half times as much as in 1910. The total assessed valuation increased from $58,749,635 in 1910 to $117,503,422 in 1921.

"These taxes—and they are going higher every year—constitute one of the costs of doing business. They are expenses which necessarily must be added to the bills which the consumer pays for gas, electric or transportation costs. If this item of taxes could be eliminated, service could in many instances be supplied at reduced rates.

"Gas, electric and street railway companies are paying approximately 25 per cent of their net income in taxes.

"In 1921, for every 1,000 cu. ft. of gas used by the average consumer 8.3 cents of his bill, or 7.29 per cent, went to pay for the gas company's taxes. If these charges in the bills could be dispensed with some companies which are now operating with little or no profit could be made to pay fair returns."

Despite these high taxes which consumers pay, Mr. Brabant argued against elimination of these taxes.

"In my opinion," he said, "all public utilities should be taxed—including municipally owned utilities. The failure to charge taxes against a consumer in the case of municipally owned utilities is unfair to all other taxpayers who are unable to obtain service from it."

Speaking of the rate utilities should be permitted to charge, Mr. Brabant said:

"A rate of return must be allowed that is high enough to attract capital into established public utility businesses, plus such additional percentage as will invite capital into the new enterprises along this line. Such a return necessarily must be over 7 per cent.

"The State Government, while it limits the earnings of utilities to such a fair return, does not ordinarily guarantee that or any other return. If the utility cannot earn that much it is the investor's loss. The State will not reimburse him."

In his talk before the joint convention Thursday Frantz Herwig, director, Wisconsin Public Utilities Bureau of Information, urged public utilities to advertise on a yearly basis in their local newspapers.

"Every utility should set aside a certain sum each year to be used for a regular once-a-week or once-a-month newspaper advertisement," said Mr. Herwig. "It is one of the best investments that a public utility can make. Advertise regularly. Do not advertise by fits and starts, for so-called advertising campaigns do not produce lasting effects. If those impressions are not kept fixed in the public mind by reiteration they are easily forgotten and the effect of your advertising is lost.

"The public is more interested in the utility business than in any other industry, for the very reason that they are using utility services daily. They are also investors in the utility business. They pay part of your taxes and they are fast beginning to realize that it is to their interest and to the community's benefit to have healthy, prosperous utilities."

The convention in session late Wednesday voted unanimously to reorganize the associations and to consolidate into one, to be known as the Wisconsin Utilities Association. Headquarters will be in Madison, with John N. Cadby as executive secretary. The purpose of the association as set down by the convention is to develop the public utility industry and to co-ordinate its activities. Another purpose was set down to conserve, encourage and safeguard investment in public utilities.

Lewis E. Gettle addressed the joint convention also late Thursday.

J. P. Pulliam, F. A. Coffin, W. M. Chester, Henry Harmon, J. Goedjen, W. H. Tompkins, A. L. Pond, S B. Sherman, J. C. Schmidtbauer, G. G. Post and J. N. Cadby were in charge of the entertainment at a luncheon in the Milwaukee Athletic Club at noon Thursday.

Buys Gas Company

San Francisco, Cal.—Announcement has been made that the Great Western Power Company has purchased the properties and good-will of the Universal Gas & Electric Company, operating in San Francisco, for $2,500,000.

Interesting Discussion on Gas Making Service and Rates Presented at Rotary Luncheon

Bridgeton, N. J.—Gas making, service and the rates necessary for its use were the chief topics presented at the meeting of the Rotary Club of Bridgeton at the luncheon held at the Bridgeton Library Annex, March 9.

The address was made by Jacob B. Jones, superintendent of the Bridgeton Gas Light Company, after being presented by the forum chairman, Belford B. Lore.

The address made by Mr. Jones, despite the fact that he had scarcely recovered from a very severe cold, was one of the most interesting of the many which has been given at the Rotary luncheons. Beginning with the origin of gas, Mr. Jones brought the development of the necessary utility from the time it was applied commercially by a blacksmith named William Murdock, who made his discovery by accident, and who lighted his home and blacksmith shop with it. It was in 1800 that the houses of Parliament in England were lighted with gas, and in this country gas was presented for the first time for lighting in a Baltimore museum in 1806 and it is worthy of note that the Baltimore gas company has been operating since that time. New York City had gas in 1823 and there was discussion of a gas plant in Philadelphia in 1826. In 1850 there were a number of small plants about the country and in 1855 the gas company here was incorporated under a special act of the Legislature which was amended in 1857. The plant here was developed here by men prominent in the affairs of the town, men with vision who had faith in the city just as there are men who to-day have faith in the projects which we have on hand. On the evening of Nov. 14, 1857, gas was for the first time turned into the Bridgeton mains, and it is with satisfaction that the company here points to the fact that since that November night there has never been a time when the service was not continued, although during the war there were many times when the officers of the company were apprehensive that the holders would not supply the demand. The first house illuminated with gas was that one still standing at Washington and Pearl Street, late the home of the late Mrs. Martha Mayer, her father then living there being the first president and superintendent of the company. The first store property using gas here was the one now occupied by Sharp Brothers, wallpaper dealers, on East Commerce Street.

The development of Bridgeton follows very closely the development of the gas company. It was one of the first acts of city council after Bridgeton was first incorporated to have the gas company furnish street lighting. The relations of the company and Bridgeton was most harmonious, pointed out Mr. Jones, and it has always been the policy of the company to do everything possible as the city would have it.

The superintendent pointed out that a gas company must always be in advance of the demands of the community it serves and the Bridgeton plant has a present capacity of 30 per cent greater than now demanded.

Mr. Jones spoke of the special gas coal necessary for gas production, briefly explained something of the manufacture of gas, its being placed in the holders, its distribution and the service which was necessary after the gas installation.

In Bridgeton, Mr. Jones said, the company has thirty miles of gas mains. There were 2,550 gas services, with 3,600 meters installed. There were less than 100 properties in Bridgeton not connected with the gas mains. It was shown that there were not less than 150 distinct uses for gas, and despite the use of other means of illumination the lighting business of the gas company is constantly increasing. This has been possible by reason of the development of the mantle.

The superintendent talked frankly about gas rates, and said that the rate would always be decided by the service rendered. Coal prices in 1917, he said, were $3 per ton of 2,240 lb., or $7.12 per ton of 2,240 lb., and in 1921, $6.36 per ton of 2,000 lb. There will never be a return to the 1917 price for coal nor for freight rates and, while there may be reductions of some sort in the future which would be reflected in the price of gas, Mr. Jones did not think it would be material or very soon.

Another element which enters into the price charged for gas is the taxes imposed by the State and municipality. In 1900 the taxes paid by the company amounted to 6 cents per 1,000 cu. ft. of gas sold. To-day the taxes are 18 cents per 1,000 ft. of gas made. This tax is course, must be paid by the ultinot likely to be decreased, and, of mate consumer, the gas company being the tax collector.

The Bridgeton superintendent declared the policy of the company was to give the very lowest rate for gas possible, and he said that when conditions would permit the directors would be the first to suggest a reduction of rates.

In closing, he made the prediction that there would come a time, and he felt he would live to see it, when all the gas will be made at the mouth of the mine, the coal being taken from the ground and placed in the retorts, and the gas so manufactured would be carried by pipes to the various muncipalities, sold to companies in their holders, so that there could be local distribution. The gas would probably not be as good quality as the gas now made but improved appliances would take care of that. Homes would be heated by gas as well as lighted, and at a price which everyone could pay. The one thing necessary was a man of ability to provide the scheme of capitalization for the enterprise.

There were several other interesting short speeches, one of them being by a visitor, C. M. Franklin, of the Standard Oil Company.

The Threatened Coal Strike

From all sides we are being told that on April 1 there is to be a nation-wide coal strike, the miners objecting to cuts, etc.

The *Rocky Mountain News*, of Denver, after reviewing the whole situation, says editorially:

"The question is public and it ought to be the duty of the Federal Government to step in on behalf of the Great Third Part (the people) and demand settlement without resort to force. Being eminently a public question, the public has a right to know the rights and wrongs of the dispute through public hearings.

"Politically, it would be a big blunder to permit the strike to take place. Unconsciously, the party in power is held responsible for business conditions in the country and a coal strike of such magnitude coming at this time would set back business for months, and business revival is just getting on its legs and is shaky and in need of support, not upset."

Southern Illinois Company Purchases Gas Plant

Through the filing of an application for a certificate of necessity and convenience before the Illinois Commerce Commission at Springfield it became known that the Southern Illinois Light & Power Company has about completed negotiations for the purchase of the St. Clair County Gas & Electric Company and will add this service corporation to its large light and power interests in this section of the State.

The transaction involves approximately $6,000,000 and includes all the properties of the St. Clair company. The latter now serves East St. Louis with gas, Belleville with gas and electricity for light and power, Swansea, a suburb of Belleville, with light and power, Caseyville, Collinsville, Edwardsville and Leclaire, a suburb of the latter, with gas. Local gas plants are maintained in East St. Louis, Belleville and Edwardsville but are not kept in operation since connection was recently made with the American Coke & Chemical Company at Granite City which supplies all the gas used in this section of the State.

The St. Clair County Gas & Electric Company is a subsidiary of the American Gas Company. The outstanding bond and stock issues of the St. Clair company are $2,481,000 and the capital stock is $3,500,000, both of which combined are thought to represent an approximate selling value of the corporation.

C. H. Quackenbush, general manager of the St. Clair company, said that he knew of the pending transfer. Any official announcement, however, must come from headquarters, he said, and he gave it as his opinion that the Southern Illinois Light & Power Company would also give out an official statement when it was ready to do so.

W. H. Sawyer, president of the Suburban Railway group, which owns the East St. Louis Light & Power Company, also said he knew of the impending change of ownership, but that this change would not affect his companies in any way. The St. Clair company now buys its electric power from the East St. Louis company, which in turn gets it from the Keokuk power dam and supplements its supply as necessary through its local plant.

The entry of the Southern Illinois Light & Power concern into the local field is considered by public service corporation managers as a logical development. This powerful concern now controls the light and power plants of dozens of southern Illinois cities and has been approaching East St. Louis steadily for years. It is now supplying light and power for Scott field from its Collinsville plant, and it also furnishes the Collinsville street lights. It has made other efforts to break into this field and was giving the St. Clair company competition in various points.

Just when the transfer is to be officially completed is not known. A hearing on the application for a certificate of necessity and convenience is expected to be set down for some time next week before the Commerce Commission, and so far as known now there will be no objection offered to the merger. It is assumed that after the St Clair company is taken over it in turn will be merged into the corporate body of the Southern Illinois Light & Power Company. For just what reason the newcomer felt it necessary to secure the certificate it is asking for is not clear to service corporation men here, but this was done evidently to keep a clear record and avoid any future entanglements with the commission over its right to do business in the new field.

Mr. Quackenbush said that the unsettled financial conditions of the last four years have restrained his company from making many necessary extensions and improvements and that the struggle has been to keep its financial head above water. He advanced the opinion that the newcomer would immediately enter upon a broad development policy which would be of great benefit to the territory served.

The change in ownership of the St. Clair company, which involves approximately $6,000,000, is accepted in financial circles as a strong indication that normal conditions are being restored. It is the largest fiscal transaction recorded in public service corporation property in this section of the country in some time. It is also thought to be a forerunner of much financial activity in this section of the State.

The Southern Illinois Light & Power Company is an Illinois Company which was originally organized at Hillsboro, Ill., in 1913, by local business men. In its early days the company supplied service principally in Montgomery County but has since extended its service until at the present time it serves some seventy communities in central and southern Illinois, including Centralia, Hillsboro, Litchfield, Gillespie, Mt. Vernon, DuQuoin, Collinsville, Eldorado, Chester, Sparta and other smaller communities. It is engaged in furnishing both gas and electric service in several of these communities but in East St. Louis will be engaged only in furnishing gas.

The officers of the Southern Illinois Light & Power Company at the present time are W. A. Baehr, president, who was chief engineer for the Laclede Gas Light Company in St. Louis up to some nine or ten years ago since which time he has been engaged as a consulting public utility engineer with offices in Chicago. The secretary of the company is H. L. Hanley, who is an attorney in Chicago and who formerly resided in the southern portion of the State. The treasurer of the company is P. C. Dings, who at present resides in Chicago and who was formerly extensively connected with financial interests in Oklahoma. The vice-presidents of the company are J. J. Frey, vice-president of the Liberty Central Trust Company, and Guy C. Lane, who is a director of the Liberty Central Trust Company and an attorney in Hillsboro, Ill. Both Mr. Frey and Mr. Lane have spent the greater part of their lives in this part of the State and have been intimately identified with a great many of the industrial enterprises in southern Illinois.

The company plans to continue the operation of the gas system in East St. Louis, Collinsville, Edwardsville, Belleville and Staunton in substantially the same manner that it has been conducted as regards the manufacture and distribution of gas and in addition to supplying gas in Belleville will also supply the electricity which also at the present time is furnished by the St. Clair County Gas & Electric Company.

This arrangement will place East St. Louis and the other cities concerned in a position to secure absolutely the best that is procurable in the way of service as the Southern Illinois Light & Power Company is a company widely experienced in public utility matters and from all inquiries which we have been able to make bears a most excellent reputation in the communities which it is supplying. The company is largely a home-owned

and controlled company in that the vast majority of its stockholders are residents of the territory which it serves in southern Illinois. This should be an advantage to the cities and the consumers in that it will place the entire situation in close contact with the financial interests which own it and also open the doors to the people generally for participation in the business of the company.

The office will be maintained in East St. Louis as formerly from which most local matters will be handled. The principal operating office of the company is in St. Louis where the executive heads of the company are located. Bert H. Peck, general manager of the company, being in charge of its entire operations throughout the whole field.

Construction Holder in Bristol

A large erection force is busy now hurrying to completion a 300,000 cu. ft. holder that is being built in Bristol, R. I., for the Narragansett Electric Lighting Company by the Western Gas Construction Company.

Brooklyn Union Gas Plans $10,929,000 Securities Issue

Brooklyn, N. Y.—Conditional upon permission from the Public Service Commission, the Brooklyn Union Gas Company will issue new securities to liquidate loans made during the period of 80-cent gas and also to replenish its working capital. Some time may elapse before the issues are marketed, because the character of the issue has not yet been decided upon and will not be until the Public Service Commission approves the issue first as to amount and second as to character. The application calls for $10,929,000 for the Brooklyn Union Gas Company and four of its subsidiaries. Negotiations with bankers have been begun.

At the end of the year the company showed a deficit of $3,427,425, but it had treated approximately $7,700,000 of collection in excess of 80 cents as a liability.

The new securities will capitalize improvements of more than $10,000,000 made by the company and its subsidiaries out of its treasury and earnings, and some $6,000,000 would be reimbursed thereby. Attention is called to the under-capitalization of various subsidiaries, chief among them the Newtown Gas Company, the property of which is valued at $6,000,000 but which has only $25,000 capital, and the Flatbush Gas Company, whose property is valued at $5,500,000 but which has capital of only $200,000.

Bring in 12,000,000-Ft. Gasser in N. Y. State

Buffalo, N. Y.—What is said to be the largest gas well in western New York, having a flow of approximately 12,000,000 ft. a day, was brought in last week fifty miles from Buffalo, at Abbey, three miles south of Forestville, Chautauqua County, by the Dickinson Fancher Peek Company. A blizzard was blowing at the time, but the roar of the escaping gas was so powerful that it could be heard for miles.

This is the second big well to be brought in in this vicinity in the past year. The last one, of 6,000,000 capacity, was opened a few months ago. At that time a contract was entered into between the Iroquois Gas Company and the drilling company, in which all the gas taken from the latter's wells will be sold to the Buffalo company. A pipe line connection between Abbey and the Indian reservation is now being built and in a short time it will be possible to pipe the gas to Buffalo. The Iroquois company, it is believed, also has prior rights in purchasing the gas from the new well.

The success of the Dickinson Fancher Peek Company has also stimulated activity on the part of many others who own land in this vicinity, including the Republic Light, Heat & Power Company, and in a short time many drills will be at work.

Issues $5,000,000 Gold Bonds

Los Angeles, Cal.—A new issue of $5,000,000 Western States Gas & Electric Company first and unified mortgage 6 per cent series "A" gold bonds is being offered at 94 and interest, yielding 6½ per cent, by a syndicate composed of Blyth, Witter & Co., Cyrus Peirce & Co., H. M. Byllesby & Co. and Hunter, Dulin & Co. The bonds are dated March 1, 1922, due March 1, 1947, and are redeemable as a whole or in part on thirty days' notice on or before March 1, 1922, at 107½ and thereafter at one-half of 1 per cent less each year.

This company, or its predecessors, has been successfully engaged in business in California for thirty-four years. It owns and operates hydro-electric, steam and gas properties in this State. It supplies thirty communities, of an estimated population of 107,000.

Net earnings for the year 1921 were in excess of twice the charges on total interest-bearing debt of the company. For the nine years ended Dec. 31, 1921, the average annual net earnings were approximately twice interest charges on total interest-bearing debt of the company.

These bonds will be secured by a first mortgage on all properties, including the new hydro-electric plant of the El Dorado Power Company, and further secured by a direct mortgage on all properties of the Western States Gas & Electric Company, subject only to the lien of the outstanding underlying closed mortgage bonds.

Will Lay 17 Miles of New Gas Mains

Minneapolis, Minn.—Seventeen miles of gas mains will be laid by the Minneapolis Gas Light Company this year, at a cost of $279,000, the City Council was informed following a meeting of the public lighting committee, at which A. T. Rand, president of the company, told of plans for extensions and improvements. The promise of these improvements followed a conference of company officials with Judge Wilbur F. Booth, of the United States District Court, whose consent to this expenditure had to be obtained first, as the company is in the hands of receivers. The improvements as outlined to the committee will consist of expending $45,000 for laying mains to eliminate low-pressure conditions in some parts of the city, expending $200,000 for additional mains in compliance with 138 petitions for extensions, and expending $34,000 for gas mains necessitated by the 1922 paving program. Construction will begin as soon as the frost is out of the ground.

Earthquake Breaks Oil Pipe Line

A press dispatch from San Luis Obispo, Cal., on March 10 says that the earthquake shock felt there was so severe it broke the pipe line of the Union Oil Company in four places.

Adds to Plant

The Atlantic City (N. J.) Gas Company is adding to its plant by the installation of a U. G. I. waste-heat boiler. The U. G. I. Contracting Company, of Philadelphia, received the contract to make the installation and will have the boiler ready to take care of the summer load. This waste-heat boiler will generate all the steam required for the large water gas apparatus recently installed.

Danville Holder Under Way

At the plant of the Danville Street Railway & Light Company, Danville, Ill., a large force of men is at work putting up the new 500,000 three-lift gas holder.

The fabrication and erection work are being taken care of by the Western Construction Company.

Adds Waste Heat Boiler Equipment

The Public Service Gas Company of New Jersey is to install additional U. G. I. waste-heat boilers in its plants at Paterson and Trenton and the contract for these installations has been awarded to the U. G. I. Contracting Company, of Philadelphia.

Central Natural Gas Company Report

San Francisco, Cal.—The Central Natural Gas Company, operating in Stockton, reports for the year 1921 that its operating revenue was $9,168.08; operating expenses, $5,652.31, giving a net operating revenue of $3,515.77. Miscellaneous non-operating revenue amounted to $1,492.78. The net corporate income for the year was $5,008.55. The surplus at the beginning of the year amounted to $38,605.58. Miscellaneous deductions were $1,000. The company declared dividends of $1,592 during the year, leaving an accumulated surplus at the end of the year of $41,022.13.

Water Gas Apparatus for Newport, R. I.

Shipment has been made of all the new parts required to alter one of the six foot six inch sets at Newport, R. I. These parts include among other items, the Model H reversing valves, a complete set of hydraulic cylinders and the new design of central control station.

These materials were fabricated by the Western Gas Construction Company.

Oil Company Builds Thirty-one Story Office Building

The Magnolia Petroleum Company has about completed its new office building at Dallas, Tex., ranking in many respects with the most notable buildings in the country. It is said to be the sixteenth highest in the United States, and the second highest building in the West. The elevation of the stonework in the chimney of the Magnolia building is 385 feet above street level. The building was built primarily for the home offices of the Magnolia Petroleum Company, but will house many large oil companies making their headquarters in Dallas. Alfred C. Bossom, of New York City, prepared the plans for the building, and C. T. Wills, Inc., New York City, is the general contractor.

Natural Gas Struck

At Marshall, Texas, the Industrial Gas Company's Lawless No. 1, in the Bethany Elysian gas fields, is reported to have blown in and is making 40,000,000 cu. ft. of gas.

This is the second gasser to be brought in by this company in the past month, the first well averaged over 60,000,000 cu. ft. of gas during the first few days of its flow.

The Texas & Pacific Railway have their large shops at Marshall, and there is a city of perhaps 8,000 people, and this gas can be put to various usages.

Contracts Awarded for New Water Gas Apparatus

The Milwaukee Gas Light Company of Milwaukee, Wis., recently placed the order with the Gas Machinery Company, of Cleveland, Ohio, for materials for one eleven-foot double superheater carbureted water gas apparatus.

This eleven-foot water gas set is to be located alongside of the present five eleven-foot water gas sets and the arrangement of construction and operation of all six sets will then be identical, enabling the operators to handle any one of the six sets with equal facility.

The Gas Machinery Company is also furnishing two sets of automatic control for the Milwaukee Gas Light Company, which will be installed on the eleven-foot water gas sets.

Contract has been placed with the Western Gas Construction Company, of Fort Wayne, Ind., for a new seven-foot water gas set, to be installed at the plant of the Sheboygan Gas Light Company. With the new set will be included an operating floor, a new coke hoist and bucket, and a high speed blower direct connected to electric motor. One of the interesting features of this set will be the use of hydraulic cylinders on all important valves, all controlled from a very effective type of central station.

Work is now going on to provide space in the plant of the Wisconsin Traction Light, Heat & Power Company, of Appleton, Wis., in which to receive the new seven-foot water gas set recently ordered from the Western Gas Construction Company. This set will include an operating floor, coke hoist, coke buggy and steam turbine driven blower.

In addition to the contract recently awarded the U. G. I. Contracting Company, of Philadelphia, by the Queens Borough Gas & Electric Company, of Far Rockaway, N. Y., for additional carbureted water gas apparatus, the latter company has commissioned the contracting company to install washer-tar batter and other equipment on its present sets. The improvements now under way will, upon completion, greatly increase the capacity and facilities of the Far Rockaway plant.

Gas Rates Reduced

Casper, Wyo.—The New York Oil Company has again asked permission of the State Public Service Commission to be allowed a new gas rate to commercial and industrial consumers from 8 to 15 per cent.

Permission was granted and this makes the second volunteer reduction made by that company since Nov., 1921.

Will Lay Mains

The Pavilion Natural Gas Company and the villages of Warsaw, LeRoy, Perry and Mt. Morris, N. Y., have settled their difficulties and the Pavilion company has agreed to lay a pipe line from Newfield Gas & Oil Company wells at Danville to Mount Morris, about fifteen miles, to supply Perry and Warsaw.

Philadelphia Co.'s Campaign Commended

The following letter from R. L. Sackett, Dean of School of Engineering, was inspired by the ready response and large enrolment which followed the particularly well-planned educational campaign among the employees of the Philadelphia Company, Pittsburgh, Pa. The direct bearing of industrial training on the economic situation is well shown and the letter is of much general interest. It follows:

Nov. 4, 1921.

A. W. Thompson, President,
Philadelphia Company,
Pittsburgh, Pa.

Dear Sir: Prof. N. C. Miller, of the Engineering Extension Division, reports that your company has taken considerable interest in the efforts of the Engineering Extension Division to give some of the advantages of the college to the men on the job.

We appreciate your hearty approval and your interest in the welfare and improvement of your wage-earners. It shows a fine spirit of co-operation among the men and an appreciation of their work, which is to-day one of the most important factors in our national readjustment.

There has been a marked awakening since the war. The value of increasing knowledge and skill in order that our men may be able to help in increasing the general output of our industries. It seems so obvious that either we must increase our output per man or else further reduce wages because of the sharp competition which European countries must offer in order to sell their goods.

In order to maintain the wages of our men we must do everything possible by the use of labor-saving machinery and by more efficient methods so that the effort required from each man will be no greater but our output will be larger at the same time that we maintain our standards of quality.

It seems most encouraging that the Engineering Extension Division type of instruction has helped and will help the men in the industries, and to the end that we may maintain our standards of living and the welfare of the men in our industries, from the bottom to the top, as we are all workers, some at one kind of a job and some at another.

Again expressing my appreciation of your interest, I am,

Yours very truly,
R. L. SACKETT.
Dean, School of Engineering.

Rocky Mountain Geologists Meet

At the bi-monthly meeting of the Rocky Mountain Association of Geologists, held in Denver March 15, Colin C. Rae, construction engineer of the Exploration Company, read a paper on "The Possible Origin of Oil."

At the next meeting will be read some valuable papers, viz.: "Symposium on Oil Shales," "Oil Shales in Brazil," "Oil Shales Development in Australia." Each of the papers will be discussed pro and con, and much enthusiasm is being manifested.

Strong hope was expressed that Denver might be given the next meeting of the national association, known as the American Association of Petroleum Geologists.

At the last meeting of the national association, held at Oklahoma City, Max Ball, who is president of the Rocky Mountain Association, was elected vice-president of the national association.

Twin States G. & E. Report Shows Profit

Annual report of the Twin States Gas & Electric Company and the Berwick & Salmon Falls Company, a subsidiary, for twelve months ended Dec. 31, 1921, shows gross of $1,210,215, compared with $1,069,272 for 1920, an increase of $140,943. Net after taxes was $468,303, against $325,339 for 1920, an increase of $142,964, and balance after charges $163,307, compared with $126,692, an increase of $36,615.

Up to March 1, 1922, $819,000 out of an authorized $1,000,000 prior lien 7 per cent cumulative stock had been distributed among 1,800 customers out of 22,800. In 1921 the company paid out approximately $50,000 in dividends on this stock to these customers.

Net earnings were considerably lower for 1921 than had been expected, due to the extremely dry summer throughout the New England States, which prevented use of the usual supply of water-power and necessitated additional use of steam-power.

Some Wyoming Oil News

The weather has moderated considerably and the daily oil run of the various Wyoming fields has been posted as follows: Salt Creek, 50,000 barrels; Rock River, 3,100; Lost Soldier, 1,800; Elk Basin, 1,900; Lance Creek, 750; Ferris, 200; Osage, 400, and Pilot Butts, 100 barrels.

Oil Company Is Making Improvements

Statements just received by the stockholders of the Domino Wyoming Oil Company place the gross earnings of the company for the past year at $48,225.75, of which all but $673.70 was paid out for improvements and general expenses.

Additional Automatic Controls Installed

The Public Service Gas Company of New Jersey was one of the first gas companies to install U. G. I. automatic controls. The success of this first installation impelled Public Service to install sixteen additional U. G. I. automatic controls in its various plants throughout northern New Jersey.

They have just placed an order with the U. G. I. Contracting Company, of Philadelphia for four more U. G. I. automatic controls to be installed at the Newark plant. Upon completion of this, Public Service will have the following U. G. I. automatic controls in operation: Newark 8, Jersey City 6, Paterson 4, and Trenton 3.

Erecting Ammonia Still at Lockport, N. Y.

Work will soon be finished on the new ammonia still at the Lockport Light, Heat & Power Company, Lockport, N. Y.

This still was built by the Western Gas Construction Company.

Franchise Is Granted

Fort Smith, Ark.—A franchise granting E. K. Hale the right to put in a gas distributing system at Alma has been granted by the Alma city council. The work of constructing the plant will start at once and gas will be supplied by means of pipes laid from the Kibler field, or from additional gas wells to be drilled in the vicinity of Alma. It is the plan of Hale to provide Alma with an ample supply of gas for domestic and industrial use, before the start of the ginning season.

Has Secured Claim Waivers

San Francisco, Cal.—The River Bend Gas & Water Company, operating in towns in the San Joaquin Valley district of California, having obtained from the Parlier Winery waiver of claims amounting to $76,603.75, was authorized to modify its refinancing plans as recently approved by the California Railroad Commission.

The authorized issue of preferred stock and bonds was reduced to the extent of the canceled claims. Parlier Winery is the principal stockholder in the River Bend company. Under the modified order the company is authorized to issue $16,640 of common stock, $75,000 of 7 per cent preferred stock and $25,000 of 6 per cent bonds in lieu of a like amount of stock and bonds heretofore issued without an order from the commission. The authorized issue was ordered canceled.

Large Gas Well Is Struck in Clarion County, Pa.

Another large gas well, owned by Clover & Neely, and located in the Pine Hollow gas field of Clarion County, Pa., on the William Texter tract, was just recently competed. It is said to be one of the largest wells brought in since the McKeesport-Versailles pool, being reported good for between 10,000,000 and 14,000,000 cu. ft. per day. This well was the sixth large producing well brought in in the Pine Hollow field and should be a good paying one as gas in that field is bringing 17 cents per thousand cubic feet.

Newly Incorporated

L. & C. Oil, Gas, Mineral Development Company has been incorporated with a capital of $50,000. The home office is at Rocky Ford, Col. Incorporators are: G. M. Coffman, Joseph B. Tilley and L. F. Tilley.

Exchanges Stock

Boston, Mass.—The Department of Public Utilities has approved the issue by the Boston Consolidated Gas Company of 11,350 additional shares of common stock, par $100, and the exchange of 5,600 of the new shares for the entire capital stock of the East Boston Gas Company on the basis of one share of Consolidated stock for four shares of East Boston Gas stock.

The remaining 5,750 shares of the new stock will be issued in exchange for the entire capital stock of Newton & Watertown Gas Light Company, one share of Consolidated stock for each share of the Newton & Watertown stock, the exchange to be effected upon the transfer to the Boston Consolidated Gas Company of the franchises and property of the East Boston Gas Company and Newton & Watertown Gas Light Company.

Union Natural Gas Report

Union Natural Gas Corporation and affiliated companies for the year ended Dec. 31, 1921, report total operation revenue of $7,350,149, operating expenses of $6,103,048, other income $261,271, interest on funded and current debt $134,822, profit and loss credit adjustment $143,847. and dividends declared during the year of $984,000. leaving net surplus for the year of $533,338. In these figures account between companies are eliminated.

U. S. Court Refuses Rehearing

The U. S. Supreme Court has refused a rehearing in the case of the Consolidated Gas Company of New York and has moved to have impounded funds returned to the company at once. The court previously held the 80-cent statutory gas rate was confiscatory.

Jayne Speaks to Gas Co. Men

Gloversville, N. Y.—The regular meeting of the Employees' Association of the Fulton County Gas & Electric Company was held in the Gloversville office Monday, Feb. 27. The speaker of the evening was H. T. Jayne, superintendent of the gas works. Mr. Jayne explained the process of water gas manufacturing. The speaker is well versed upon this subject, having had practical experience in both the operating and experimental departments of the United Gas Improvement Company.

The program of the evening was opened with Mr. Jayne's speech, followed by some musical numbers by gas company members.

Gas Plant Destroyed

Central City, Neb. — The gas plant was practically destroyed by fire, leaving the city without gas for an indefinite period. The plant was owned and operated by the city and was fully insured. Steps will be taken at once to rebuild.

Pacific Gas & Electric

San Francisco, Cal.—Pacific Gas & Electric Company declared regular quarterly $1.25 common devidend, payable April 15 to stock of record March 31.

Commission Defends Gas Co. Rates

Harrisburg, Pa.—The Public Service Commission dismissed complaints of citizens of Jeannette against the Greensboro Gas Company's increase in natural gas rates last January from 37 to 47 cents per thousand cubic feet.

The commission in a report stated that from testimony presented any valuation placed on the company's property would justify the rates attacked. The company claimed a value of over $15,000,000. The question of valuation was not determined, but held open by the commission in order to provide a later unprejudiced investigation.

The company has filed a supplement to its tariff further increasing the rates to 53 cents gross to 50 net per thousand cubic feet, effective April 1. The company operates in Fayette, Greene, Washington and Westmoreland counties.

Long Island Utilities to Merge

At a special meeting of stockholders of the Long Island Lighting Company propositions were ratified to purchase the property and assets of the Consumers' Gas Company of Long Island, the Southold Lighting Company and the Riverhead Electric Light Company. The purchases are to be made under terms of contracts previously entered into with these companies and in accordance with the provisions of orders by the Public Service Commission.

Oil Company Makes Annual Report

On March 15 the Continental Oil Company made public its annual report for the year 1921. The net earnings for the year are $1,129,518, equal to $11.29 a share. compared with earnings of $2,248,025, or $25.10 a share for the previous year.

The Continental Oil Company is the largest distributer in the Western States of crude oil, their refinery being located at Florence, Col., a city a few miles west of Pueblo. E. T. Williams is the president.

City to Be Heard in Rate Case

Corporation Counsel John P. O'Brien, as the representative of the city, is to be permitted to examine all data submitted to the Public Service Commission by the gas company in connection with the pending gas rate cases.

Gas Company Abolishes the Service Charge

Allentown, Pa.—A new tariff, eliminating the service charge, has been filed by the Allentown-Bethlehem Gas Company. It becomes effective April 1. The tariff includes the following points:

Decreases and Omissions — Decreases the rate for gas consumed in the Hellertown district from $1.30 to $1 net per thousand cubic feet for gas consumed over 10,000 and up to 40,000 cu. ft. and for gas consumed over 50,000 cu. ft. from $1.30 to 90 cents per thousand cubic feet.

The service charge heretofore in effect of 50 cents to $1.25 per meter per month, based upon the size of the meter installed, has been omitted from the tariff.

Increases—Increases the base rate for gas consumed from $1.20 net per thousand cubic feet to $1.30 net per thousand cubic feet in the Allentown, Bethlehem and Catasauqua districts.

A reconnection charge of $2.50 is established.

Additions — Minimum Bill — No bill rendered less than $1 per month. This minimum bill allows for consumption of gas up to 700 cu. ft per month.

No discount allowed on minimum bill.

The company serves the following districts:

Allentown District — Allentown, Fullerton and surrounding municipalities.

Bethlehem District — Bethlehem, Fountain Hill, Hanover Township and surrounding municipalities.

Catasauqua District—Catasauqua, North Catasauqua, Hokendauqua, Coplay, Northampton Borough and surrounding municipalities.

Hellertown District—Lower Saucon Township and Borough of Hellertown.

Increased Rate for Natural Gas Effective April 1

Seventy cents a thousand cubic feet for natural gas supplied to Batavia and villages and towns of western New York by the Republic Heat, Light & Power Company has been authorized in an order issued in Albany by the Public Service Commission. The new rate is described as the net rate, and nothing is said in the order about a discount for the prompt payment of bills. The present rate is 60 cents, with a discount of 5 cents for prompt payment of bills, making the net rate 55 cents. The new rate, therefore, is an increase of 15 cents. It becomes effective on April 1.

Continuance of the present minimum monthly charge of $1 a month is also authorized in the order. In granting the rate increase the commission held that "based on actual results of operation, a rate of 70 cents per thousand cubic feet will yield only a fair return upon the value of the property used in the public service" The new rate is to remain in effect for a period of one year, and then until a further order is made by the commission.

Aside from Batavia, the villages and towns to which the order applies are: Alexander, Corfu, Pavilion, Bethany, Stafford, Darien and Pembroke, in Genesee County; Alden, Akron, Clarence, Elma, Lancaster, Newstead and Marilla, in Erie County; Attica, Middlebury and Covington, in Wyoming County.

Last September the gas company petitioned the Public Service Commission for a rate of 90 cents a thousand, with a discount of 10 cents for prompt payment of bills. The company also asked that the $1-a-month minimum charge be continued and that a $1-a-month service charge be authorized.

Figures in regard to the investment and hearings by the gas company were presented, and in the first part of January briefs were presented by the attorneys of the gas company and the attorneys representing the city.

On March 11, 1921, the commission granted the gas company the 60-cent rate, which was an increase from 35 cents a thousand cubic feet, the rate which had been in effect for a number of years.

Seeks Authority for Bond Issue

Municipal Gas Company, of Albany, N. Y., has applied to the New York State Public Service Commission for permission to issue $950,000 in thirty-year 5½ per cent bonds to pay for improvements additions and changes in equipment at its Riverside power station.

Quebec Using New Set

The new 8-ft. water gas set at the plant of the Quebec Railway, Light, Heat & Power Company, Ltd., Quebec, Canada, has been thoroughly tested out and put into operation.

This set was recently built by the Western Gas Construction Company.

Will Install Scrubbing Plant

The Des Moines (Iowa) Gas Company will install a toluol scrubbing plant. The U. G. I. Contracting Company, of Philadelphia, has the contract to make the installation.

$700,000 Issue Offered

A new $700,000 issue of New York State Gas & Electric Corporation thirty-year first mortgage 6 per cent bonds is being offered by J. G. White & Co. and Janney & Co., of Philadelphia, Pa. The bonds are being offered at 94½ and interest, to yield 6.40 per cent.

The company supplies gas and electric service without competition to thirteen adjacent communities in central New York. The principal cities and towns served include Ithaca, Norwich, Oneonta and Cortland. The estimated physical value of the property is about $4,000,000, including two additional properties which the company is now acquiring subject to existing liens of $165,000. For the past five years average net earnings, exclusive of the two new properties, have been more than double the fixed charges on this issue, including the present series of $700,000.

California Oil Operations

Los Angeles, Cal.—Oil field operations reported to State Oil and Gas Supervisor R. E. Collom during the week ending March 11 show sixteen new wells started as compared with twenty-one during the previous week. The total of new wells this year is 216, as compared with 247 the same date last year.

Tests for water shut-off this week numbered twenty-seven, as compared with thirty-four during the previous week. Yearly total to date, 248; total to same date last year, 156.

Abandonments numbered one this week, as compared with eight during the preceding week. Total to date this year, fifty-eight; total to same date last year, forty-four.

Personal Notes

New Officers Elected to White Oil Corporation

P. J. White, former president of the White Oil Corporation, has been elected chairman of the board of directors, and W. B. Emmert, former president of the United Central Oil Corporation, now consolidated with the White Oil Corporation, has been elected president.

Additional directors were elected as follows: S. R. Bertron and Murray W. Dodge, of Bertron, Griscome & Co.; E. J. Connette and George Bullock, of the United Gas & Electric Corporation, and W. B. Emmert. Messrs Emmert, Bertron and Connette were added to the executive committee, and Murray W. Dodge to the finance committee.

These changes are pursuant to the recent merger of the oil interests of the White Oil Corporation and the United Gas & Electric Corporation.

Illinois Association Officers

At the election of officers of the Illinois Gas Association, R. S. Wallace, vice-president and general manager of the Central Illinois Light Company, Peoria, was elected president and R. B. McDonald, central manager of the Peoples Power Company, Moline, was elected vice-president.

H. E. Bates, Peoples Gas Light & Coke Company, of Chicago, and W. M. Willett, general manager of the Western United Gas & Electric Company, Aurora, were elected members of the executive committee.

R. V. Prather, of Springfield, was elected joint secretary of the two associations.

WILLIAM CROTON BESSON, aged eighty, treasurer of the New York Mutual Gas Light Company, died of heart disease in the Washington Square Hospital on March 8, after an illness of several months He was born in this city. In 1873 he became an employee of the commercial department of the New York Mutual Gas Light Company. In 1910 he was made treasurer. He was a veteran of the civil war, having in the early sixties organized the Twenty-second Regiment, in which he became captain. He was a member of Albion Lodge, F. and A. M., and the Twenty-second Veterans Association. A daughter, Miss Augusta Besson, survives him.

WILLIAM H. GUSCIO, superintendent of the United Gas & Improvement Company, has resigned his position with the company. Mr. Guscio has been connected with the gas company for the past twenty-two years and for the past two years has been manager and superintendent of the gas plant

He states that he has not yet made any future plans and has no idea as to his successor. J. J. Dudley, foreman, is in charge of the plant.

P. F. MCENANEY has been made acting treasurer of the Superior Meter Company, Brooklyn, N. Y. He will continue his duties as chief engineer of the company. Mr. McEnaney succeeds John Smith, who met death recently from an assassin's bullet.

NEW BEDFORD GAS & EDISON LIGHT COMPANY, New Bedford, Mass., has petitioned department of public utilities for approval of issue of $1,500,000 first mortgage bonds bearing interest at not exceeding 6 per cent and maturing not later than Jan. 1, 1938. Proceeds are to be devoted to payment of a like amount of bonds falling due June 1, 1922.

H. M. BYLLESBY & Co. are offering an issue of Standard Gas & Electric Company 6 per cent gold notes at 86 and interest to yield 7.70 per cent. Net revenue of the company for 1921 was more than twice the annual interest charges on total funded debt, including these notes, and amounted to $3,823,645.

AMERICAN GAS & ELECTRIC COMPANY declared the regular quarterly dividends of 2½ per cent on common, payable April 1 to stock of record March 18, and of 1½ per cent on preferred, payable May 1 to stock of record April 13.

E. J. MCMAHON, for the last few years in charge of field operations in Wyoming for the Glenrock, Royalty and Producers, Marine, Pilot Butte and Mosher oil companies and the Superior Petroleum Company, has resigned his position and will take charge of field operations for the Western Oil Fields Corporation in the southern fields. Operations at Mexia and Pine Island will come under his management.

THE UNION NATURAL GAS CORPORATION, Pittsburgh, Pa., and affiliated companies for the year ended Dec. 31, 1921, report total operating revenue of $7,350,149; operating expenses of $6,103,048; other income, $261,271; interest, $134,882; profit and loss credit adjustment, $143,847; dividends, $984,000, leaving net surplus for the year of $533,338. In these figures accounts between companies are eliminated.

Gross earnings for January of the Columbus Gas & Electric Company were $1,799,313, an increase of $201,177; surplus. $690,298, an increase of $59,463.

Gas Bill Insurance

The conversation was on the subject of the recent decision by the Supreme Court which was in favor of Consolidated Gas Company. The housewife was fingering a bunch of receipts which in event of an adverse decision for the gas company would have meant rebates running back over a period of years. "Well, I see those things are no good now," said an acquaintance. "Oh, I don't care," said the housewife. "My husband took out insurance last month in the shape of a purchase of ten shares of Consolidated Gas stock. My profits now are enough to pay gas bills for two years to come."—

Adds Consumer Stockholders

San Francisco, Cal.—The Pacific Gas & Electric Company during January and February sold $1,105,800 of its first preferred 6 per cent stock direct to its consumers, according to an announcement by Vice-President A. F. Hockenbeamer. This brings the total amount of sales to date, since the company inaugurated its "public partnership" policy, to $27,024,000.

Increases Size of Plant

To keep pace with the expansion of business, the Public Service Gas Company of New Jersey has placed orders for new apparatus at its Newark plant. The improvements will include two 8-ft. 6-in. generators and other parts, also complete hydraulic operating equipment for three 8-ft. 6-in. sets. The contract for all of the work has been awarded to the U. G. I. Contracting Company, of Philadelphia